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June 6, 2007

Draft San Francisco Bicycle Plan
Planning Department Case # 2007.0347E

DOCUMENTS DEPT

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SAN FRANCISCO PLANNING DEPARTMENT

June 5, 2007

**RE: CASE NO. 2007.0347E – SAN FRANCISCO BICYCLE PLAN PROJECT
NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND
NOTICE OF PUBLIC SCOPING MEETING**

To: To Responsible Agencies, Trustee Agencies, and Interested Parties:

A Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and a Notice of Public Scoping Meetings for the above-referenced project, described below, has been issued by the Planning Department. The NOP/Notice of Public Scoping Meeting is either attached or is available upon request from Debra Dwyer, whom you may reach at (415) 575-9031 or at the above address. The NOP/Notice of Public Scoping Meeting will also be available on-line at www.sfgov.org/site/planning/mea by approximately June 5.

Project Description. The San Francisco Bicycle Plan Project (Proposed Project) would involve the adoption of a citywide bicycle transportation plan (comprised of both the "Policy Framework" and "Network Improvement" planning documents) and implementation of specific bicycle improvements identified within the plan. The Proposed Project sets objectives and identifies policy changes that would enhance the City's bikeability. It also describes the existing bicycle route network (a series of interconnected streets in which bicycling is encouraged), and identifies gaps within the citywide bicycle route network that require improvement.

The Proposed Project is an update of the existing 1997 San Francisco Bicycle Plan. By maintaining an approved bicycle plan, the City and County of San Francisco is eligible for selected State and regional funds to develop bikeways and related facilities. Additionally, San Francisco City Charter Sections 16.102 and Section 8A.113 state that San Francisco should develop "a safe, interconnected bicycle circulation network; travel...by bicycle and on foot must be an attractive alternative to travel by private automobile"; and "bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking." For more information about the Bicycle Plan Project, please visit the Bike Program Web site at: www.bicycle.sfmta.com/bikeplan.

The Planning Department has determined that an EIR must be prepared for the Proposed Project prior to any final decision regarding whether to approve the project. The purpose of the EIR is to provide information about potential significant physical environmental effects of the Proposed Project, to identify possible ways to minimize the significant effects, and to describe and analyze possible alternatives to the proposed project. Preparation of an NOP or EIR does not indicate a decision by the City to approve or to disapprove the project. However, prior to making any such decision, the decision makers must review and consider the information contained in the EIR.

The Planning Department will hold one (1) **PUBLIC SCOPING MEETING**, at the time and location indicated in the NOP/Notice of Public Scoping Meeting. The purpose of this meeting is to receive oral comments to assist the Planning Department in reviewing the scope and content of the environmental impact analysis and information to be contained in the EIR for the project. Written comments will also be accepted at this meeting and until the close of business on **July 6, 2007**. Written comments should be sent to Debra Dwyer, San Francisco Planning Department,

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax
415.558.6409

Planning
Information:
415.558.6377

1650 Mission Street, Suite 400, San Francisco, CA 94103. The San Francisco Planning Department maintains a list of persons who have expressed an interest in the Proposed Project. In an effort to reduce paperwork, future mailings will be conducted via email to those persons for whom an email address has been provided. In the event that you would prefer to receive future mailings through the U.S. Postal Service, you must inform Debra Dwyer in writing at the address above.

If you work for an agency that is a Responsible or a Trustee Agency, we need to know the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities in connection with the Proposed Project. Your agency may need to use the EIR when considering a permit or other approval for this project. We will also need the name of the contact person for your agency. If you have questions concerning environmental review of the Proposed Project, please contact **Debra Dwyer** at **(415) 575-9031**.

**NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND
NOTICE OF PUBLIC SCOPING MEETING**

Date of this Notice:	June 5, 2007		
Lead Agency:	San Francisco Planning Department 1650 Mission Street, Suite 400, San Francisco, CA 94103		
Agency Contact Person:	Debra Dwyer	Telephone:	(415) 575-9031
Project Title:	San Francisco Bicycle Plan Update EIR		
Project Sponsor:	San Francisco Municipal Transportation Agency		
Contact Person:	Oliver Gajda	Telephone:	(415) 701-4343
Project Address:	City-wide		
Assessor's Block and Lot:	Not applicable.		
City and County:	San Francisco		
Project Description:	See attached.		

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT. AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15063 (Initial Study), 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance).

A **PUBLIC SCOPING MEETING** will be held pursuant to the State of California Public Resources Code Section 21083.9 and California Environmental Quality Act Guidelines Section 15206 to receive oral comments concerning the scope of the EIR. The meeting will be held on **Tuesday, June 26th**, at 6:00 p.m. at 101 Grove Street, corner of Grove and Polk Streets in the third floor auditorium. Please see the attachment for more information.

Written comments on the scope of the EIR will be accepted until the close of business on **July 6, 2007**. Written comments should be sent to Debra Dwyer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103.

Documents relating to the proposed project are available for review, by appointment, at the Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103. Please contact Debra Dwyer at (415) 575-9031.

State Agencies: We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency. Thank you.

June 5, 2007

Date


Paul E. Maltzer, Environmental Review Officer

中文資料請電: 558-5956

Para sa impormasyon sa Tagalog tumawag sa: **558-6251**

Para información en Español llamar al: **558-5952**

SAN FRANCISCO BICYCLE PLAN UPDATE EIR

CASE NO. 2007.0347E

PROJECT DESCRIPTION

The San Francisco Bicycle Plan Project (Proposed Project) would involve the adoption of a citywide bicycle transportation plan (comprised of both the "Policy Framework" and "Network Improvement" planning documents) and implementation of specific bicycle improvements identified within the plan. The Proposed Project sets objectives and identifies policy changes that would enhance the City's bikeability. It also describes the existing bicycle route network (a series of interconnected streets in which bicycling is encouraged), and identifies gaps within the citywide bicycle route network that require improvement.

The Proposed Project is an update of the existing 1997 San Francisco Bicycle Plan. By maintaining an approved bicycle plan, the City and County of San Francisco is eligible for selected State and regional funds to develop bikeways and related facilities. Additionally, San Francisco City Charter sections 16.102 and Section 8A.113 state that San Francisco should develop "a safe, interconnected bicycle circulation network; travel...by bicycle and on foot must be an attractive alternative to travel by private automobile"; and "bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking." For more information about the Bicycle Plan Project, please visit the Bike Program Web site at: www.bicycle.sfmta.com/bikeplan.

The Proposed Project includes implementation of the following documents: the "Policy Framework," the "Network Improvement Document," and the phasing of implementation for potential bicycle route network improvements. Each of these components of the Proposed Project is described briefly below.

1. Policy Framework

This component of the Proposed Project provides the policies and components of a successful bicycle program. Seven major goals are identified within this document: (1) increase safe bicycle use; (2) refine and expand the existing bicycle route network; (3) ensure plentiful, high-quality bicycle parking to complement the bicycle route network; (4) adopt bicycle-friendly practices and policies (such as, ensuring other planning efforts contain bicycle transportation sections) (5) promote safe bicycling; (6) increase enforcement of bicycle-related violations; and (7) prioritize and increase bicycle funding.

2. Network Improvement Document

This component describes the existing bicycle route network, identifies potential improvements to the bicycle route network, and describes the network's opportunities and constraints. Several options are proposed for bike route improvements within this document. The attached map graphically illustrates the proposed bicycle network as it is currently envisioned. The items on the map are grouped into categories that reflect a proposed phasing of bicycle improvements described in the Network Improvement Document. The map shows the existing bicycle route network, proposed near-term improvements, and proposed long-term improvements to the bicycle route network. The map also shows proposed shared use lane markings ("sharrows") installation at various locations throughout the city. Shared Lane Pavement markings assist cyclists with proper lane placement along bicycle routes when bike lanes are not present, and assist drivers by indicating routes where cyclists may be more prevalent. More information regarding these proposed roadway markings can be found at <http://www.sfmta.com/cms/bsafe/28372.html>.

PROPOSED BICYCLE ROUTE NETWORK ADDITIONS AND IMPROVEMENTS



- Proposed Near-Term Bicycle Improvement Projects
- Proposed Long-Term Bicycle Route Network
- Proposed Shared Use Lane Markings or Minor Improvements
- Existing Bicycle Route Network

Long-term improvement projects are either currently located on the existing bicycle route network or could be added to the bicycle route network at a future date. Specific designs for these projects have not been developed. Near-term projects will be specifically evaluated within the proposed environmental review and are further described below.

The final component of the Proposed Project is the proposed near-term implementation plan phasing of the "Bicycle Plan Project." Near-Term projects are bicycle projects that were originally listed as priority projects in a citywide bicycle planning process, bicycle projects that were already funded but not implemented prior to the recent injunction, or bicycle projects that have recently been designed. It is foreseeable that the following near-term projects could be implemented within the next five (5) years and will therefore be analyzed by the EIR at a project-level of detail:

1. 2nd Street bike lanes, Market Street to King Street
2. 5th Street bike lanes, Market Street to Townsend Street
3. 7th Avenue at Lincoln Way, traffic signal and timing modification
4. 7th Avenue bike lanes/sharrows, Lawton Street to Lincoln Way
5. 14th Street eastbound bike lane, Market to Dolores Streets
6. 16th Street bike lanes, 3rd Street to Illinois Street
7. 17th Street Corridor, Corbett Avenue to Kansas Street
8. 19th Avenue mixed-use path, Buckingham Way to Holloway Avenue
9. 23rd Street bike lanes, Kansas Street to Potrero Avenue
10. Alemany Boulevard bike lanes, Rousseau Street to Bayshore Boulevard
11. Alemany Boulevard bike lanes, San Jose Avenue to Rousseau Street
12. Bayshore Boulevard bike lanes, Cesar Chavez Street to Paul Avenue
13. Bayshore Boulevard southbound bike lane, Industrial Street to Silver Avenue
14. Beale Street southbound bike lane, Folsom Street to Bryant Street
15. Broadway bike lanes, Polk Street to Webster Street
16. Broadway Tunnel signage improvements
17. Buckingham Way bike lanes, 19th Avenue to 20th Avenue
18. Cargo Way bike lanes, Jennings Street to Amador Street
19. Cesar Chavez Street bike lanes, US 101 to I-280
20. Cesar Chavez/26th Streets corridor bike lanes, US 101 to Sanchez Street;
21. Claremont Boulevard bike lanes, Portola Drive to Dewey Boulevard
22. Clipper Street bike lanes, Diamond Heights Boulevard to Douglass Street
23. Division Street bike lanes, 9th Street to 11th Street
24. Fell Street and Masonic Avenue signal improvements
25. Fremont Street southbound bike lane, Howard Street to Harrison Street
26. Glen Park Area bike lanes (San Jose to Alemany connection)
27. Holloway Avenue bicycle boulevard, Lee Avenue to Varela Avenue
28. Howard Street westbound bike lane, short extension at 9th Street
29. Howard Street westbound bike lane, The Embarcadero to Fremont Street

30. Illinois Street bike lanes, 16th Street to Islais Creek
31. Innes Avenue bike lanes, Donahue Street to Hunters Point Boulevard
32. John F. Kennedy Drive bike lanes, Kezar Drive to Transverse Drive
33. John Muir Drive bike lanes, Lake Merced Blvd to about 1,000' south of Skyline Boulevard
34. Kansas Street bike lanes, 26th Street to 23rd Street
35. Kirkham Street bike lanes, 6th Avenue to Great Highway
36. Laguna Honda Boulevard bike lanes, Plaza to Woodside Avenue
37. Laguna Honda Boulevard bike lanes, Woodside Avenue to Portola Drive
38. Market and Valencia Streets intersection and traffic signal improvements
39. Market Street bike lanes, Octavia Boulevard to 17th Street
40. Market Street bike lanes, Van Ness Avenue to Octavia Boulevard
41. Masonic Avenue Corridor, Fell Street to Geary Boulevard
42. McAllister Street bike lanes, Market Street to Masonic Avenue
43. McCoppin Street bike path, Market to Valencia Streets
44. McCoppin Street westbound bike lane, Gough Street to Valencia Street
45. Mississippi Street bike lanes, Mariposa Street to 16th Street
46. North Point Street bike lanes, Van Ness Avenue to The Embarcadero
47. Ocean Avenue bike lanes, Alemany Boulevard to San Jose Avenue
48. Otis Street westbound bike lane, South Van Ness Avenue to Gough Street
49. Page and Stanyan Streets traffic signal improvements
50. Phelan Avenue bike lanes, Ocean Avenue to Judson Avenue
51. Point Lobos Avenue bike lanes, Great Highway to El Camino del Mar
52. Polk Street contra flow bike lane, Market Street to McAllister Street
53. Portola Drive bike lanes, Corbett Avenue to O'Shaughnessy Blvd
54. Portola Drive bike lanes, O'Shaughnessy Boulevard to Sloat Boulevard
55. Potrero Avenue/Bayshore Boulevard bike lanes, south of 25th Street
56. Sagamore Street/Sickles Avenue bike lanes, Brotherhood Way to Alemany Boulevard
57. Scott Street northbound left turn bike lane, Oak Street to Fell Street
58. Sloat Boulevard bike lanes, The Great Highway to Skyline Boulevard
59. Townsend Street bike lanes, The Embarcadero to 8th Street
60. "The Wiggle" improvements (The "Wiggle" is the flattest route for cyclists traveling from Market Street to the Panhandle Path and Park. It is a group of streets collectively identified by many cyclists as the "Wiggle" due to the numerous turns involved. The streets often associated with the "Wiggle" include: Duboce, Steiner, Waller, Pierce, Haight, Scott, and Fell Streets.)

POTENTIAL ENVIRONMENTAL ISSUES

The Proposed Project could result in potentially significant environmental effects. The EIR will examine those effects, identify mitigation measures, and analyze whether proposed mitigation measures would reduce the environmental effects to a less than significant level as defined by CEQA. The EIR will also analyze two alternatives that will represent a range of environmental impacts - from modest impacts to

the local environment to more intensive alterations of the City's environment. The EIR will also evaluate a No Project Alternative, which would entail leaving the existing bike path network as is. The following environmental issues are likely to be addressed in the EIR:

Plans and Policies

The Proposed Project is largely within the City of San Francisco Department of Public Works (DPW) Right-of-Way (ROW) and as a result would have little direct impact on land use in the City. The EIR will discuss the plans and policies applicable to the Proposed Project, including the San Francisco General Plan, as well as the policy adjustments proposed in the 2005 San Francisco Bicycle Plan Policy Framework document.

Aesthetics

The EIR will discuss potential impacts of the Proposed Project on scenic highways within the City as well as potential impacts to aesthetics from the removal of street trees. Impacts will be analyzed at the project-level where possible to identify impacts as accurately as possible. Where project-level details are not available, impacts will be discussed programmatically. No visual simulations are proposed as it is not expected that potential impacts would warrant this level of effort. The EIR will also discuss the consistency of the Proposed Project with street tree ordinances and protection policies.

Transportation

The Proposed Project could have potentially significant impacts on the City's transportation network. A transportation study, to be conducted by Wilbur Smith and Associates, will address impacts to area roadways, public transportation, and pedestrians.

Future traffic volumes will be developed from output of the San Francisco County Transportation Authority's travel demand model (herein referred to as the "SFCTA Model"), as the 2025 Base scenario. The travel demand associated with the various rezoning options studied will be obtained from the SFCTA Model based upon the anticipated future land uses that will be developed as a result of the zoning under those options.

Transit conditions will be assessed, with future ridership also derived from the SFCTA Model. No increases in service beyond currently funded Muni (and other transit operator) improvements will be assumed. Pedestrian and bicycle conditions will be analyzed qualitatively, as will freight loading conditions.

Air Quality

The EIR will include quantitatively evaluate air quality impacts resulting from implementation of the Proposed Project by selecting several key "hot spot" intersections and modeling emission increases at those locations due to increased traffic congestion and vehicle idling.

PUBLIC SCOPING MEETINGS

The Planning Department is holding one (1) **PUBLIC SCOPING MEETING**, at the following time and location: Tuesday, June 26th, at 6:00 p.m. at 101 Grove Street, corner of Grove and Polk Streets in the third floor auditorium

Tuesday, June 26, 2007
101 Grove Street
Corner of Grove and Polk Streets
Third Floor Auditorium
6:00 p.m.

The meeting location is wheelchair accessible. The closest BART and MUNI Metro station is the Civic Center station. The nearest accessible MUNI bus line is the 21-Hayes. Additional MUNI lines that are near the meeting location include the 6-Parnassus, 7-Haight, 9-San Bruno, 47-Van Ness, 49-Van Ness/Mission, 71-Haight-Noriega, and the F-Market. For more information about MUNI accessible services, call 415-923-6142.

For those driving, there is accessible on-street vehicle parking in the vicinity of the meeting location and at the Civic Center Garage (entrance on the south side of McAllister Street, between Polk and Larkin Streets).

For those cycling, attended on-street bicycle parking will be available in close proximity to the meeting location. Additionally, the Civic Center Garage has secure bicycle racks in view of a parking attendant.

The purpose of these meetings is to assist the Planning Department in reviewing the scope and content of the environmental impact analysis and information to be contained in the EIR for the project. Each member of the public will be given three (3) minutes to comment and offer testimony for consideration. Written comments will also be accepted at the meetings and until the close of business on **July 6, 2007**.



SAN FRANCISCO
PLANNING DEPARTMENT

1650 Mission Street Suite 400
San Francisco, CA 94103-2479

Gavin Newsom | Mayor

Rev. Dr. James McCray Jr. | Chairman

Tom Nolan | Vice-Chairman

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Shirley Breyer Black | Director

Wil Din | Director

Peter Mezey | Director

Leah Shahum | Director

Nathaniel P. Ford, Sr. | Executive Director/CED

MEMORANDUM

DATE: June 5, 2007
TO: Interested Parties
FROM: Oliver Gajda, MTA Bicycle Program Manager
RE: San Francisco Bicycle Plan Summary Introduction

In June 2005, the Board of Supervisors adopted the San Francisco Bicycle Plan, Policy Framework. In November 2006, the California Superior Court issued a ruling in the lawsuit challenging the San Francisco Bicycle Plan's CEQA compliance. The court ruled that the analysis of the Bicycle Plan should have included review of the Policy Framework and the draft Network Improvement document as one document. Additionally, the California Superior Court ruled that the Policy Framework document may have environmental impacts and therefore should not have been exempted from CEQA.

In January 2007, The Municipal Transportation Agency Board directed staff to perform the necessary environmental review of the Bicycle Plan. The Municipal Transportation Agency (MTA) seeks to satisfy the requirements of CEQA by obtaining the adequate environmental clearance for the San Francisco Bicycle Plan.

The San Francisco Bicycle Plan (Plan) consists of the "Policy Framework" document, "Network Improvement" document, and Implementation Phasing of specific improvements identified within the Plan. The Plan should be considered a draft until formal Board of Supervisor adoption occurs. Adoption of the Plan can not occur until the necessary environmental review is completed.

The Plan is an update of the 1997 San Francisco Bicycle Plan. By maintaining an approved bicycle plan, the City and County of San Francisco is eligible for selected State and regional funds to develop bikeways and related facilities. Additionally, San Francisco City Charter sections 16.102 and Section 8A.113 state that San Francisco should develop "a safe, interconnected bicycle circulation network"; and that travel... "by bicycle and on foot must be an attractive alternative to travel by private automobile". The City Charter also states that "bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking."

1. Policy Framework

This component of the Plan provides the policies and components of a successful bicycle program. Seven major goals are identified within this document: (1) increase safe bicycle use; (2) refine and expand the existing bicycle route network; (3) ensure plentiful, high-quality bicycle parking to complement the bicycle route network; (4) adopt bicycle-friendly practices and policies (such as, ensuring other planning efforts contain bicycle transportation sections) (5) promote safe bicycling; (6) increase enforcement of bicycle-related violations; and (7) prioritize and increase bicycle funding.

2. Network Improvement Document

This component describes the existing bicycle route network, identifies potential improvements to the bicycle route network, and describes the network's opportunities and constraints. Several options are proposed for bike route improvements within this document. The attached map graphically illustrates the proposed bicycle network as it is currently envisioned. The items on the map are grouped into categories that reflect a proposed phasing of bicycle improvements described in the Network Improvement Document. The map shows the existing bicycle route network, proposed near-term improvements, and proposed long-term improvements to the bicycle route network. The map also shows proposed shared lane markings ("sharrows") installation at various locations throughout the city. Shared lane markings assist cyclists with proper lane placement along bicycle routes when bike lanes are not present, and assist drivers by indicating routes where cyclists may be more prevalent.

Long-term improvement projects are either currently located on the existing bicycle route network or could be added to the bicycle route network at a future date. Specific designs for these projects have not been developed. Near-term projects will be specifically evaluated within the proposed environmental review.

3. Implementation Phasing

The final component of the Plan is the implementation phasing of specific bicycle improvements identified within the Plan, also called near-term projects. Near-Term projects include bicycle projects that were originally listed as priority projects in a citywide bicycle planning process, projects that were already funded but not implemented prior to the recent Superior Court of California ruling preventing implementation, or projects that have recently been designed. It is foreseeable that the near-term projects could be implemented within the next five (5) years.

Implementation Phasing- Proposed Near-Term Projects

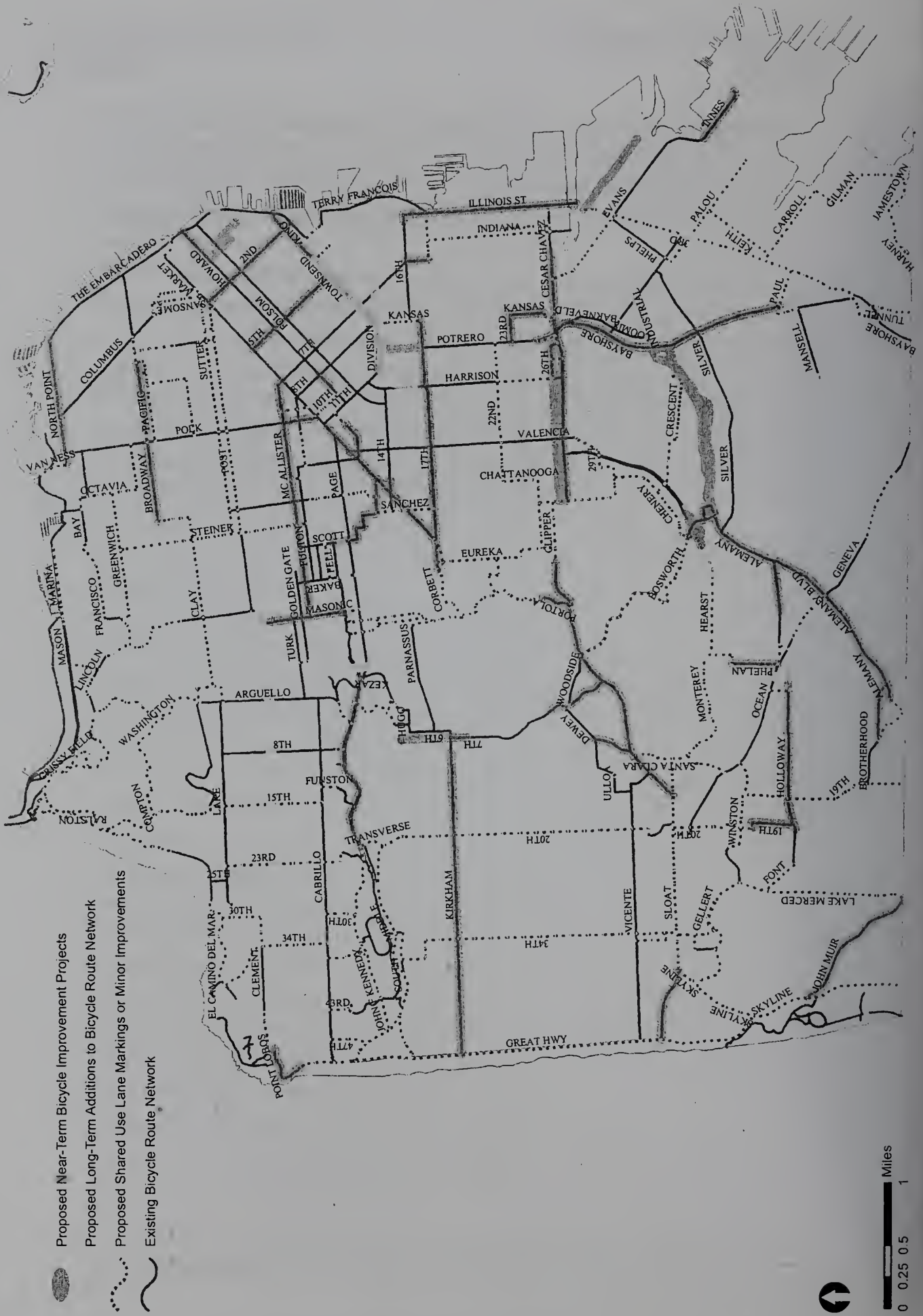
(In alphanumeric order)

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PROPOSED BICYCLE ROUTE NETWORK ADDITIONS AND IMPROVEMENTS



1. Policy Framework



SAN FRANCISCO BICYCLE PLAN POLICY FRAMEWORK MAY 2005

PREPARED FOR:



PREPARED BY:



IN ASSOCIATION WITH:

Parisi Associates
Pittman Associates

This project was funded through a Transportation Development Act Article 3 Grant, with oversight from the California Traffic Control Devices Committee.



Additional funds were provided by Transportation Development Act Article 3 Grants.

Public outreach and community planning for the San Francisco Bicycle Plan was funded by a Caltrans Community Based Planning Grant administered by the San Francisco County Transportation Authority to the San Francisco Bicycle Coalition.



ACKNOWLEDGEMENTS

MAYOR

Gavin Newsom

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Peter Tannen, Bicycle Program Manager
Oliver J. Gajda, Assistant Bicycle Program Manager and Project Manager
Mike Sallaberry, Bicycle Facility Engineer
Deirdre Weinberg, Bicycle Parking Planner
Nick Carr, Bicycle Safety Outreach Coordinator
David Carcia, Bicycle Program Planning Intern

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Dave Snyder, Transportation for a Livable City*

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Leah Shahum, San Francisco Bicycle Coalition
Peter Straus, San Francisco Muni
Joshua Switzky, San Francisco Planning Department
Laura Thompson, ABAG Bay Trail Program
Andrew Thornley, San Francisco Bicycle Advisory Committee
Laura Timothy, BART

SAN FRANCISCO BICYCLE COALITION

Mary Brown
Amy Panella
David Gartner
Thank you to the numerous SFBC volunteers.

CONSULTANT TEAM

Alta Planning + Design

Mia Birk, Principal-In-Charge

Ian Moore, Project Manager

Arif Khan, Planner

Lev Anderson, Planner*

Dustin White, Assistant Planner

Daniel Lerch, Assistant Planner

Parisi Associates

David Parisi

Pittman Associates

Donna Pittman

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EXECUTIVE SUMMARY

BICYCLING FOR THE FUTURE

Major infrastructure and programmatic improvements have taken place since the San Francisco Bicycle Plan was first developed in 1997: miles of new bike lanes have been striped; hundreds of bike racks have been installed; the number of bicycle commuters has more than doubled from 1990 to 2000ⁱ; while the number of bicyclist injury collisions has decreasedⁱⁱ.

The recognition of bicycles as a key component of a sustainable transportation system has permeated local and regional governments and funding agencies. Popular bicycling corridors such as Valencia Street show a more than doubling in bicycle traffic along that street once bike lanes were striped. The passage of Proposition K (the extension of the half-cent local transportation sales tax) in 2003 provides a historic opportunity to systemically upgrade and expand San Francisco's bicycle facilities.

With San Francisco's temperate climate, attractive neighborhoods, limited parking, and compact geography, there is an enormous potential to encourage more people to bicycle: for errands, work, school, or fun.

This updated Plan contains a framework to shape San Francisco into a world-class bicycling city. By investing in and implementing the bicycle facilities, education, and innovative policies and programs in this Plan, the City makes cycling a more viable mobility option. To achieve another major increase in the number of people that use bicycles as transportation, all Action items included in this Plan must be implemented within the next five years. This will require strong leadership from local elected officials, cooperation between a host of city agencies, and an unwavering commitment to the goals contained herein.

SUMMARY OF GOALS, OBJECTIVES AND ACTIONS

The following section presents overall San Francisco Bicycle Plan project goals developed by this project's Technical Advisory Committee and Oversight Committee. These goals, objectives and action items provide key staff, agencies, and local elected officials with direction on the steps required to improve San Francisco for bicyclists.

1. SAN FRANCISCO BICYCLE PLAN OVERALL GOALS AND VISION

OVERALL GOAL:

Make bicycling an integral part of daily life in San Francisco.

PLAN GOALS

- | | |
|---|---|
| 1. INCREASE SAFE BICYCLE USE | 5. PROMOTE SAFE BICYCLING |
| 2. REFINE AND EXPAND THE EXISTING BICYCLE ROUTE NETWORK | 6. INCREASE ENFORCEMENT OF BICYCLE-RELATED VIOLATIONS |
| 3. ENSURE PLENTIFUL, HIGH-QUALITY BICYCLE PARKING TO COMPLEMENT THE BICYCLE ROUTE NETWORK | 7. PRIORITIZE AND INCREASE BICYCLE FUNDING |
| 4. ADOPT BICYCLE-FRIENDLY PRACTICES AND POLICIES | |

1. INTRODUCTION GOALS, OBJECTIVES

The Introduction describes the two major components of the 2004 Bicycle Plan Update planning process: the Policy Framework and the Network Improvement Document. The chapter continues with an introduction to San Francisco land use, an overview of the City's demographics, a brief history of the extensive planning process conducted for this Plan, a list of agency responsibilities related to Plan implementation, and a discussion of bicycle project funding.

Goal:

Make bicycling an integral part of daily life in San Francisco.

Objectives:

- Increase Safe Bicycle Use
 - Triple the daily bicycle trips in San Francisco to "10 percent by 2010"ⁱⁱⁱ; and
 - Reduce the rate of bicycle-motor vehicle collisions as bicycle usage increases;

- Identify and pursue new and existing local, regional, state, and federal funding sources for bicycle facilities and education and promotion programs.

2. BICYCLE ROUTE NETWORK GOALS, OBJECTIVES AND ACTION ITEMS

The Bicycle Route Network Chapter provides an overview of recommended improvements to the citywide Bicycle Route Network, a discussion of facility types, and a summary of the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT)-adopted Supplemental Design Guidelines that provide new design standards for bicycle facilities. Chapter 2 sets the stage for implementation of specific project improvements and outlines potential projects to be further defined in the Network Improvement Document.

Goal:

Refine and Expand the Existing Bicycle Route Network

Network identified within the San Francisco General Plan.

Objectives:

- Provide safe space for bicyclists through a comprehensive network of bikeways that are appropriately signed, marked, and/or traffic-calmed. Ideally, the facilities would include on-street routes, marked bicycle lanes, and off-street bicycle paths;
- Utilize innovative designs, where appropriate, to improve bicycle usage and safety; and
- Ensure that the Bicycle Route Network:
 - allows bicycle access within a quarter mile of major commercial and residential areas;
 - provides access to all San Francisco Municipal Railway (Muni) metros, Bay Area Rapid Transit (BART), and Caltrain stations, ferry terminals, and other major transit hubs; and
 - is well signed.

Action 2.3

Complete the required design and engineering for improvements to Recommended Study Streets and implement, if feasible, according to the Department of Public Works (DPW)'s Five Year Proposed Paving Plan.

Action 2.4

Implement the Transit First Policy's bicycle and transit elements.

Action 2.5

Conduct a before and after study on the impacts of allowing bicycles in new or existing exclusive bus lanes that are identified from a joint Muni-DPT selection process.

Action 2.6

Amend Traffic Code Section 31 to allow bicyclists in exclusive right-curb bus lanes on two-way streets.

Action 2.7

Review multi-lane streets with excess capacity, such as those with less than 600 vehicles per lane per peak-hour, for possible lane removal to accommodate bicycle lanes or other bicycle-friendly treatments.

Action 2.1

Complete the Bicycle Plan: Network Improvement Document.

Action 2.2

Update the Official Bicycle Route Network Map to reflect route relocations, and periodically update the Bicycle Route

Action 2.8

Adopt the San Francisco County Transportation Authority (SFCTA) technical working group's recommended revisions to San Francisco's level of service (LOS) standards and methodologies such that they better respond to the multimodal nature of San Francisco's transportation system, specifically addressing bicycles.

Action 2.9

Define and identify "bicycle arterial streets," conduct public outreach, and seek a Municipal Transportation Agency (MTA) policy decision to modify the Traffic Calming Guidelines.

Action 2.10

Implement Supplemental Design Guidelines on specific Recommended Network Improvement projects with the appropriate level of analysis and study.

Action 2.11

Prioritize phased application of the Shared-Use Pavement Arrow on appropriate existing signed bicycle routes, wide curb lanes, and newly designated routes where bicycle lane implementation is demonstrated to be infeasible.

Action 2.12

Develop and enforce a set of standards that must be strictly adhered to by contractors for street excavation restoration, including a guarantee of one year for replacement of any defective work.

Action 2.13

Amend DPW's guidelines to allow acceptance of a City street due to its inclusion on the Bicycle Route Network, subject to Board of Supervisor approval.

Action 2.14

Create a prioritized citywide bicycle pathway inventory that would include: surface condition; signing and lighting status; required maintenance or improvements needed; and the agency responsible for each path.

Action 2.15

Maintain a minimum of a weekly sweeping schedule (DPW and the Recreation and Park Department) - especially for off-street paths that are not currently cleaned on a regular schedule - in addition to sweeping bikeways whenever there is an accumulation of debris such as gravel, glass, and sand.

Action 2.16

Increase the profile of the Bicycle Route Network within DPW's street resurfacing and paving prioritization process.

Action 2.17

Create an inventory of locations along the Bicycle Route Network that intersect or run parallel to railroad tracks. Appropriate measures should be undertaken to mitigate the impacts of the track crossings to bicyclists. Removal of unused tracks along the Bicycle Route Network should also be undertaken.

3. BICYCLE PARKING GOALS, OBJECTIVES AND ACTION ITEMS

The Bicycle Parking Chapter provides an overview of the existing Planning Code governing provision of bicycle parking for public and private buildings and garages and recommends improvements for administration and enforcement, as well as providing new guidelines for implementation of bicycle parking throughout the City.

Goal:

Ensure Plentiful, High-Quality Bicycle Parking to Complement the Bicycle Route Network

Objectives:

- Provide secure short-term and long-term bicycle parking, including support for bike stations and attended bicycle parking facilities at major events and destinations; and
- Provide current and relevant information to cyclists regarding bicycle parking opportunities through a variety of formats.

Action 3.1

Consolidate Sections 155.1, 155.2, 155.3, and 155.4 of the Planning Code to provide clearer regulation, guidance, and exemptions related to bicycle parking.

Action 3.2

Modify the Planning Department's requirements for bicycle parking so that they are less dependent on automobile parking provisions.

Action 3.3

Amend the Planning Code to increase required bicycle parking for new residential developments and base this requirement on a proportion of dwelling units.

Action 3.4

Ensure that all garage bicycle parking is secure, well monitored, and well advertised at garage entrances and other appropriate locations.

Action 3.5

Increase the Planning Department's monitoring and enforcement of bicycle parking provisions in the Planning Code, especially when issuing building permits.

Action 3.6

Hold meetings as needed between the Department of Parking and Traffic (DPT) Bicycle Program and Planning Department staff to update citywide bicycle-parking compliance status and review bicycle-parking information posted on the Bicycle Program website.

Action 3.7

Conduct DPT's bicycle-parking training for new Planning Department personnel as needed.

Action 3.8

Ensure that all City leases are negotiated to include the required level of bicycle parking by cooperative efforts of the City Real Estate Department and the DPT Bicycle Program.

Action 3.9

Pursue a citywide policy to provide secure bicycle parking at all City buildings in areas to be specified by the individual agencies, subject to safety regulations and available space, by cooperative efforts of the City Real Estate Department and the DPT Bicycle Program.

Action 3.10

Amend the Planning Code to lower the number of automobile parking spaces required in buildings where Class 1 bicycle parking is provided.

Action 3.11

Amend the Planning Code to require bicycle-parking in each individual building of large, multiple-building developments.

Action 3.12

Amend the Planning Code to allow tenants to bring their bicycles into buildings unless Class I bicycle-parking is provided.

Action 3.13

Prepare additional guidelines for placement and design of bicycle parking within City rights-of-way, with DPT Bicycle Program, Planning Department, and Department of Public Works (DPW) input. Consider curb-side on-street bicycle parking, and “sleeve”

ring racks where inverted “U” racks cannot be accommodated.

Action 3.14

Develop and maintain a DPT, City-distributed, bicycle-parking outreach campaign in print, audio-visual, and web-based formats to provide relevant bicycle-parking information such as garage locations and locker availability.

Action 3.15

Work with the San Francisco Police Department (SFPD) to make bicycle theft investigation a higher priority and to create a better system for returning recovered bicycles to their owners.

4. TRANSIT AND BRIDGE ACCESS GOALS, OBJECTIVES AND ACTION ITEMS

The Transit and Bridge Access Chapter addresses the linkages between bicycle trips and transit service, as well as bicycle access to local and regional bridges. By improving bicycle access to transit vehicles and stations, many opportunities are created for increased bicycle trips. This chapter contains recommendations for creating greater bicycle access to Muni and other transit agencies’ vehicles and to existing and future transit stops and stations.

Goal:

Expand Bicycle Access to Transit and Bridges

Objectives:

- Provide bicycle access to transit vehicles whenever feasible;
- Provide convenient bicycle access and bicycle parking at transit stations; and,
- Provide bicycle access to all bridges whenever feasible.

Action 4.1

Create a Muni policy that explicitly permits folded bicycles on all San Francisco Municipal Railway (Muni) vehicles.

Action 4.2

Develop a pilot program to provide bicycle access on light rail vehicles for a trial period.

Action 4.3

Update Muni bicycle accessibility guidelines and widely distribute and publicize these guidelines.

Action 4.4

Work with Bay Area Rapid Transit (BART) to analyze existing policy, identify expanded bicycle-access times, and create a trial program for non-folding bicycle access in both directions on Transbay peak period trains.

Action 4.5

Work with Caltrain, which is a major commuter connection to downtown San Francisco, to expand bicycle access on its fastest service “Baby Bullet” trains.

Action 4.6

Ensure that all San Francisco transit stations, including the new Transbay Terminal, provide barrier-free bicycle access and state-of-the-art bicycle parking facilities.

Action 4.7

Work with San Francisco Bay Area transit operators and the Metropolitan Transportation Commission (MTC) to develop, implement, maintain, expand, and enforce improved inter-modal bicycle access.

Action 4.8

Promote bicycle parking “stations” at transit hubs that provide secure, monitored bicycle parking, commuter information, and bicycle maintenance services.

Action 4.9

Allow cyclists with disabled bicycles (due to mechanical failure or collision) to bring them on Muni vehicles, interior space permitting and at the vehicle operator’s discretion, when the Muni vehicle either

does not have bicycle racks or have racks that are full.

Action 4.10

Install bicycle racks on all Muni-operated buses, and all other transit buses operating in San Francisco, including the 45-foot Golden Gate Transit equipment.

Action 4.11

Work with the California Department of Transportation (Caltrans) and the Golden Gate Bridge, Highway and Transportation District (GGBHTD) to provide improved bicycle access to and upon all San Francisco bridges, including the design and building of a multi-use path on the west span of the Bay Bridge.

Action 4.12

Work with Caltrans and the MTC in continued studies of the Bay Bridge pathway to ensure that such a facility integrates with San Francisco’s on-street bicycle facilities in a manner that is safe and convenient for bicycle commuter and recreational cyclists.

5. EDUCATION GOALS, OBJECTIVES AND ACTION ITEMS

The Education Chapter provides an overview of the City’s bicycle educational outreach efforts. It recommends creating a comprehensive set of general and targeted DPT cycling safety classes and workshops. The Education Chapter addresses several aspects of bicycle safety for bicyclists, motorists, and City staff to ensure that all parties are aware of cyclists’ rights and responsibilities.

Goal:

Educate the general public and targeted population about bicycle safety.

- Create, fund, and implement DPT bicycle-safety outreach campaigns for motorists, bicyclists, and the general public.

Objectives:

- Create, fund, and implement official Department of Parking and Traffic (DPT) bicycle-safety curricula for the general public and targeted populations.

Action 5.1

Provide DPT bicycle-safety information to diverse age, income, and ethnic populations.

Action 5.2

Provide DPT bicycle-safety information in languages that are widely used within San Francisco such as Spanish and Cantonese.

Action 5.3

Partner with other agencies, where appropriate, to distribute DPT bicycle-safety education materials in mass mailings.

Action 5.4

Create a web-based bicycle education traffic school curriculum as an option in lieu of other pecuniary penalties for traffic law violators.

Action 5.5

Increase DPT participation in Bike to Work Day activities by providing resources and materials as staff availability and funding allow.

Action 5.6

Implement new outreach campaigns for improved bicycle facilities, especially those located on the Bicycle Route Network.

Action 5.7

Develop DPT bicycle-safety classes for City Employees.

Action 5.8

Develop a DPT bicycle-safety workshop for transit operators and other large fleet-vehicle operators.

Action 5.9

Develop bicycle-safety curricula for use in the San Francisco Unified School District (SFUSD) and San Francisco public colleges.

Action 5.10

Periodically evaluate and adjust, where appropriate, DPT's bicycle-safety program.

6. ENFORCEMENT AND SAFETY GOALS, OBJECTIVES AND ACTION ITEMS

The Enforcement and Safety Chapter summarizes existing traffic violations related to bicycle collisions and makes recommendations for improved enforcement of traffic laws for both motor vehicles and bicycle traffic.

Goal:

Improve bicycle safety through targeted enforcement of moving violations.

Objectives:

- Increase San Francisco Police Department (SFPD) enforcement of motorist and cyclist traffic violations that pose the greatest threat to safety;
- Provide Department of Parking and Traffic (DPT) bicycle safety education to police and those cited for moving violations that focuses on safe cycling, relevant traffic laws, and safe sharing of the roadway; and,

- Increase SFPD enforcement of motorist violations in bicycle facilities, including additional patrols to enforce the prohibition against double-parking in bike lanes.

Action 6.1

Place a high priority on SFPD enforcement of both bicyclist and motorist violations that most frequently injure cyclists.

Action 6.2

Develop a SFPD "fix-it ticket" program, in collaboration with the DPT, for bicycle equipment violations.

Action 6.3

Develop a method at the SFPD to systematically share non-collision bicyclist citations with DPT Bicycle Program.

Action 6.4

Develop and implement, in collaboration with the SFPD, a DPT bicycle-safety traffic school curriculum as an option for those cited for moving violations.

Action 6.5

Request that the California Bicycle Coalition work to change California Vehicle Code (CVC) 21754 (Passing on the right) so that it applies to bicycles.

Action 6.6

Clarify sections of the San Francisco Traffic Code that pertain to double parking in bicycle lanes and increase parking enforcement and fines for this violation.

Action 6.7

Post “no parking in bike lane” signs along bicycle lanes where double parking occurs.

Action 6.8

Increase the enforcement of the prohibition of operating motorcycles in bike lanes.

Action 6.9

Develop a DPT bicycle-safety curriculum for all SFPD police officers that focuses on the rights and responsibilities of bicycle traffic and techniques required for safe and legal sharing of the roadway.

Action 6.10

Increase SFPD and DPT bicycle-mounted patrols.

Action 6.11

Develop a system for hospitals, emergency rooms, and clinics to report all instances of bicycle injury to the SFPD and to the DPT Bicycle Program Manager.

Action 6.12

Implement a system to allow cyclists to report collisions directly to the Bicycle Program website.

Action 6.13

Inform cyclists that they are legally entitled to file a collision report when one is not initiated by the police.

Action 6.14

Develop a standardized procedure for reporting San Francisco Municipal Railway (Muni) bicycle-related incidents and make this information more transparently available to the Bicycle Program.

7. PROMOTION GOALS, OBJECTIVES AND ACTION ITEMS

The Promotion Chapter focuses on attracting new bicyclists to the streets of San Francisco, keeping existing bicyclists on the road, and generally promoting awareness of the benefits that increased bicycle usage holds for the City.

Goal:

Promote Safe Bicycling and Safe Bicycling Practices.

Objectives:

- Through community partnerships, identify funding, develop, and

implement bicycle media campaigns and promotional materials to promote bicycling as a safe, healthy, cost-effective, environmentally beneficial transportation choice; and,

- Target promotional materials to San Francisco's diverse population groups.

Action 7.1

Promote the benefits of the Bicycle Route Network facilities to diverse age, income, and ethnic populations.

Action 7.2

Formalize bicycle education and promotion responsibilities and develop partnership agreements between the Department of Parking and Traffic (DPT) Bicycle Program; the Department of the Environment (SF Environment); the Department of Public Health (DPH); and other City agencies.

Action 7.3

Expand bicycle promotion and incentive programs for City employees to serve as a model program for other San Francisco employers.

Action 7.4

Include, where appropriate, telephone and web-based contact information for the Metropolitan Transportation Commission (MTC)'s "511" program on relevant DPT Bicycle Program materials.

Action 7.5

Encourage and promote bicycle related businesses within San Francisco.

8. GENERAL PLAN AMENDMENTS, ENVIRONMENTAL REVIEW, AND CITYWIDE COORDINATION GOALS, OBJECTIVES, AND ACTION ITEMS

The General Plan Amendments, Environmental Review, and Citywide Coordination Chapter address many elements that are relevant to bicycle policy consistency. This chapter focuses on recommended modifications to the General Plan's Transportation Element, Downtown Area Plan, and to the city's environmental review guidelines.

Goal:

Adopt Bicycle-Friendly Practices and Policies

Objective:

Integrate consideration of bicycle travel into all roadway planning, design, and construction.

Action 8.1

Incorporate this Bicycle Plan in whole by reference into the General Plan and amend sections of the General Plan that are relevant to bicycling, including the Transportation Element and Downtown Area Plan, according to the goals of the Bicycle Plan.

Action 8.2

Adhere to the process for General Plan amendments as required for subsequent amendments and updates to the Bicycle Plan and Bicycle Route Network.

Action 8.3

Ensure that all current and proposed Area Plans' objectives and policies are consistent with the goals of the San Francisco Bicycle Plan. Whenever updates or revisions are considered to existing Area Plans, especially those that do not now contain sections on bicycling, these Area Plans should include sections on bicycling consistent with the goals of the Bicycle Plan. These current Area Plans include: Central Waterfront, Chinatown, Civic Center, Rincon Hill, and South of Market.

Action 8.4

Update the Planning Department's "Guidelines for Environmental Review: Transportation Impacts," to ensure adequate accommodation of bicycles.

Action 8.5

Ensure that non-automated traffic counts conducted as part of any City transportation or development study include: bicycle counts at the same locations where motor

vehicles are counted; an inventory of existing bicycle parking within a two-block radius of the study site; and the project's impacts on any existing or proposed bikeways designated in the General Plan.

Action 8.6

Consult DPT regarding any proposed bicycle facilities, namely public agencies with jurisdictions or rights-of-way within the City and County of San Francisco.

i If the non-commuting (working at home) inhabitants of San Francisco are included, the percentage would be 1.9%, while if the non-commuting population is not included, the mode share for those commuting to work by bicycle would be 2.1%.

ii Chapter 6 details bicyclist injury collisions.

iii It should be noted that the estimate of bicycle mode share must take into account variations in data acquisition methodologies, percentage variation, range of acceptable error, and periodic variations. A distinction should be made that tripling all trips by bicycle, and not just commute work trips, is the stated vision. The most extensive data on commuting is collected at the national level by the U.S. Census Bureau. This commuter data, however, does not account for recreational bicycle trips, bicycle trips made by children, and general utilitarian bicycle trips for everyday transportation needs. If these trips were included within the total mode share for bicycle use, the overall percentage of use would probably be slightly higher. A 1997 local telephone survey of 600 registered voters suggested 3.7% of San Franciscoans commute by bicycle. The San Francisco Bicycle Coalition's byline "10% by 2010" is based on this 1997 survey. It should be noted, however, that this 1997 survey is not considered statistically significant when trying to reliably explain Citywide behavior. This is mainly because the survey only interviewed the sub-population of registered voters as opposed to a randomized sample of the entire population.

1. INTRODUCTION

INTRODUCTION GOALS AND OBJECTIVES

Goal:

Make bicycling an integral part of daily life in San Francisco.

Objectives:

- Increase Safe Bicycle Use:
 - Triple the daily bicycle trips in San Francisco to “10 percent by 2010”¹; and,
 - Reduce the rate of bicycle-motor vehicle collisions as bicycle usage increases;
- Identify and pursue new and existing local, regional, state, and federal funding sources for bicycle facilities and education and promotion program.

SAN FRANCISCO’S COMMITMENT TO BICYCLING

Bicycling is a clean, economical, and healthy transportation mode for San Francisco. Since the late-nineteenth century, people have ridden bicycles here. With its temperate climate, attractive neighborhoods, limited parking, mixed land-uses, and compact geography, San Francisco continues to attract a diverse group of cyclists: commuters, shoppers, recreational riders, and tourists. The City is also home to a diverse, dynamic bicycle culture; a large, active advocacy group, the San Francisco Bicycle Coalition (SFBC); and an established Bicycle Advisory Committee (BAC) appointed by the Board of Supervisors (BOS).



Emperor Norton II riding a
“boneshaker” in San Francisco.

¹ It should be noted that the estimate of bicycle mode share must take into account variations in data acquisition methodologies, percentage variation, range of acceptable error, and periodic variations. A distinction should be made that tripling all trips by bicycle, and not just commute work trips, is the stated vision. The most extensive data on commuting is collected at the national level by the U.S. Census Bureau. This commuter data, however, does not account for recreational bicycle trips, bicycle trips made by children, and general utilitarian bicycle trips for everyday transportation needs. If these trips were included within the total mode share for bicycle use, the overall percentage of use would probably be slightly higher. A 1997 local telephone survey of 600 registered voters suggested 3.7% of San Franciscans commute by bicycle. The San Francisco Bicycle Coalition’s byline “10% by 2010” is based on this 1997 survey. It should be noted, however, that this 1997 survey is not considered statistically significant when trying to reliably explain Citywide behavior. This is mainly because the survey only interviewed the sub-population of registered voters as opposed to a randomized sample of the entire population.

This chapter introduces San Francisco's characteristic bicycling environment, the City's transportation policy framework, the Plan's public participation process, and the goals and objectives guiding the development of the Plan.

PLAN DEVELOPMENT AND IMPLEMENTATION

The San Francisco Bicycle Plan Policy Framework was developed with considerable input from the SFBAC; the SFBC; numerous City departments and agencies; and the Department of Parking and Traffic (DPT). The San Francisco County Transportation Authority (SFCTA) – Prop K sales tax, California's Transportation Development ACT (TDA) Article 3, and California Department of Transportation (Caltrans) provided substantial funding to develop this Plan and conduct public outreach.

The Plan is also based upon a significant amount of public input and thorough review by a broad-based Technical Advisory Committee (TAC) comprised of community members and representatives from many City departments and regional agencies with an interest in or responsibility for development or implementation of the recommendations in this Plan. The role of this TAC is to advise DPT and its consultant, Alta Planning + Design, on technical matters that would impact and influence their respective departments and agencies. TAC members also serve as liaisons soliciting additional feedback, comments, or support from their respective departments or agencies.

The Technical Advisory Committee members are listed below:

- Association of Bay Area Governments - Bay Trail (ABAG)
- Bay Area Air Quality Management District (BAAQMD)
- Bay Area Rapid Transit (BART)
- Department of Public Works (DPW)
- Golden Gate Park Concourse Authority
- National Park Service
- Planning Department
- Police Department
- Port of San Francisco
- Presidio Trust of San Francisco
- Recreation and Park Dept.
- Redevelopment Agency
- SF Bicycle Advisory Committee (BAC)
- SF Bicycle Coalition (SFBC)
- SF County Transportation Authority (SFCTA)
- SF Department of Parking & Traffic (DPT)
- SF Fire Department
- SF Municipal Railway (Capital Planning)
- SF Municipal Railway (Service Planning)
- Treasure Island Development Authority

In addition to the TAC, the Bicycle Plan Update also has an Oversight Committee (OC). The role of this committee is to provide general oversight and guidance on the vision, goals, and objectives of the overall bicycle planning process. The OC members are listed below:

- Office of the Mayor
- Planning Department
- SF Bicycle Advisory Committee (BAC)
- SF Bicycle Coalition (SFBC)
- SF County Transportation Authority (SFCTA)
- SF Department of Parking & Traffic (DPT)
- SF Municipal Railway (Capital Planning)
- Transportation for a Livable City (TLC)

THE BICYCLE PLAN: POLICY FRAMEWORK AND NETWORK IMPROVEMENT

There are two major components to the 2004 Bicycle Plan Update planning process: the Policy Framework and the Network Improvement Document.

POLICY FRAMEWORK

The Policy Framework provides an overview of the policies and components of a successful bicycle program including education, outreach, enforcement and bicycle parking. The goals and objectives (listed in the Executive Summary) for the Policy Framework are based on the goals and objectives in the 1997 San Francisco Bicycle Plan. These updated goals and objectives reflect the City's commitment to improving the quality of life of its residents and expanding the role and importance of bicycle transportation in the City of San Francisco. The goals and objectives were developed and refined based on comments from City staff from numerous departments, the OC, the SFBC, and the public.

This Plan presents a framework for the City to provide the safe and attractive environment needed to promote bicycling as a transportation mode. Since the adoption of the City's first Bicycle Plan in 1997, a tremendous amount has been accomplished: scores of facilities improvements were implemented; new bicycle programs continue to be developed; San Francisco ranked as one of the nation's best cycling cities by Bicycling Magazine in 2001; and according to the US Census, the number of bicycle commuters in San Francisco doubled from 1990 to 2000, while collisions involving bicyclists decreased (More extensive information on collisions can be found in Chapter 6).

This Plan presents major enhancements to San Francisco's bicycle planning framework by:

- emphasizing an expansion and refinement of the existing Bicycle Network;
- incorporating new design guidelines for a wide range of bicycle facilities, inspired by recently developed standards from other jurisdictions across the nation and around the world; and,
- updating many chapters and topics of the City's original 1997 Bicycle Plan.

NETWORK IMPROVEMENT

The second component of the overall Bicycle Plan Update is the Network Improvement Document. It identifies potential projects to improve bicycle transportation throughout San Francisco. The Network Improvement Document consists of detailed traffic engineering design concepts for each project. It also examines issues that need to be resolved prior to project funding, such as the need for demonstrated public support or mitigation of impacts as identified through the environmental review process. Another goal of this document is to provide enough of an assessment of the project so potential funding agencies can determine if the project is feasible.



Photo Credit: Michael Rauner (courtesy of SFBC)

A bicyclist travels the Valencia Street bike lanes on a local shopping trip.

Once the Network Improvement Document is complete, it will be presented to the Municipal Transportation Agency (MTA) Board for approval. The projects identified in the Network Improvement Document will still require environmental review and approval by the BOS prior to implementation. Chapter 2 of this Plan outlines the potential projects that will be further developed in the Network Improvement Document.

SAN FRANCISCO'S CHALLENGES TO BICYCLING

While bicycling in San Francisco is a transportation option for some, it still presents challenges. Among them are the City's topography, concentrated development, and high traffic volumes. The Bicycle Route Network directs bicyclists to the flattest streets with low traffic volumes or slow motor vehicle speeds, where possible, as well as connecting major attractors and neighborhoods.

However, physical and institutional limitations to the citywide Bicycle Route Network still exist. The built urban environment constrains the ability to accommodate the many competing transportation modes. A finite space exists for pedestrians, motor vehicles, transit, and bicyclists. When bicycle facility improvements are made, the impacts to other modes must be taken into consideration and balanced with the overall vision of transportation in the City. The City's Transit First Policy provides principles to help guide this vision for bicycles, transit, and other modes.²

² Section 16.102 of the San Francisco Charter-TRANSIT-FIRST POLICY.

The following principles shall constitute the City and County's transit-first policy and shall be incorporated into the General Plan of the City and County. All officers, boards, commissions, and departments shall implement these principles in conducting the City and County's affairs:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.

SAN FRANCISCO LAND USE

The City and County of San Francisco has approximately 780,000 residents within approximately 47 square miles: an average population density of 16,500 persons per square mile. San Francisco's neighborhood-based land use patterns contribute to the appeal of utilitarian and recreational bicycling. Unique City resources, such as Golden Gate Park, Crissy Field, the Presidio, Ocean Beach, Lake Merced, Candlestick Point Recreation Area, John McLaren Park, and the Golden Gate Bridge provide "bikable" recreation opportunities in or near most neighborhoods, while commercial activities and employment districts serving technology, financial, medical, commercial, and industrial jobs, are scattered across the City attracting bicycle commuters and creating many "bikable" shopping opportunities. Major public buildings, such as City Hall and the Main Library are near the center of the City where traffic and parking are at a premium: a comprehensive network of bicycle facilities provides another viable access method to public services. While San Francisco's neighborhood structure lends itself to neighborhood bicycle trips, opportunities to access recreational resources, employment, schools and public services throughout San Francisco also exist. It is important that the Bicycle Route Network serve the entire City, including links to all of the land uses described above. Figure 1-1 illustrates some San Francisco land uses, neighborhoods, and public buildings.

SAN FRANCISCO DEMOGRAPHICS

COMMUTE PATTERNS

A central focus of presenting commute information is to identify the current mode split of people that live and work in San Francisco. Mode split refers to the form of transportation a person chooses: walking, bicycling, taking a bus or train, driving, etc. One major objective of any bicycle facility improvement is to increase the percentage of people who choose to bicycle rather than drive a car or be driven. Every eliminated motor vehicle trip or vehicle mile

-
2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile.
 3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety.
 4. Transit priority improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve pedestrian safety.
 5. Pedestrian areas shall be enhanced wherever possible to improve the safety and comfort of pedestrians and to encourage travel by foot.
 6. Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.
 7. Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.
 8. New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments.
 9. The ability of the City and County to reduce traffic congestion depends on the adequacy of regional public transportation. The City and County shall promote the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system.
 10. The City and County shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service provided by the Municipal Railway. (Added November 1999)

represents a quantifiable reduction in air pollution and other problems associated with traffic congestion.

SAN FRANCISCO RESIDENTS BICYCLING TO WORK³

Journey to work data from the 2000 U.S. Census for San Francisco, California, and the United States is shown in Table 1-1.

Table 1-1
Journey to Work Data

Mode	United States	California	San Francisco
Bicycle	0.4%	0.8%	1.9 %
Drove Alone	75.7%	71.8%	41.0%
Carpool	12.2%	14.6%	9.3%
Public Transit	4.7%	5.1%	32.2%
Walked	2.9%	2.9%	8.8%
Other	4.1%	4.8%	1.1%

Source: U.S. Census 2000

San Francisco has the highest bicycle to work mode share of major U.S. cities having more than 500,000 inhabitants. According to Rides for Bay Area Commuters 2003 Commute Profile, about two percent (2%) of all San Francisco residents cycle to work giving the City a relatively high commute bicycling mode split. This represents five times the national average of four tenths of one percent (0.4%) and about two and one half times the state average of eight tenths of one percent (0.8%).

According to a 2003 Rides Commuter Profile, 59% of potential Bay Area bicyclists are male; 63% have an income more than \$65,000, and 40% are under the age of 40. Twenty-two percent of all Bay Area residents surveyed consider bicycling a viable option for their commute choice, while 32% of those surveyed cited that travel distance was the greatest obstacle for them to bicycle to work. The average San Francisco resident travels 10 miles to work in 29 minutes with three out of four living and working in the City and County of San Francisco.⁴



Bicycle commuters using the Market Street bicycle lanes.

³ It should be noted that if the U.S. Census respondents who work at home are subtracted from the commute population, the mode share for trips to work by bicycle would increase to 2.1%. Additionally, it should be noted that the U.S. Census data although statistically valid, does not account for children bicyclist and non-work bicycle trips. It has been suggested that San Francisco's bicycle share is actually higher than 2.1%.

⁴ Rides Commuter Profile 2003 <http://rideshare.511.org/research/commuterprofile2003.asp>

This information can be utilized in targeted marketing campaigns to encourage more bicycle ridership in San Francisco, and also begins to highlight the latent demand for bicycling with the Bay Area and San Francisco.

TRAVEL TIME TO WORK

Travel time to work for the United States, California, and San Francisco is shown in Table 1-2. This is important because it can give an indication of the number of potential new bicycle commuters. The average commute time in the U.S., regardless of mode, is about 30 minutes⁵, while in Europe, travel times tend to be somewhat longer⁶.

Table 1-2
Travel Time to Work Data

Travel time	United States	California	San Francisco
Less than 15 minutes	29.4 %	25.3 %	14.7 %
15 to 29 minutes	36.1 %	35.4 %	35.8 %
30 to 44 minutes	19.1 %	20.9 %	26.3 %
45 to 59 minutes	7.4 %	8.2 %	11.9 %
60 minutes or more	8.0 %	10.1 %	10.6 %

Source: U.S. Census 2000

Approximately fifteen percent of San Francisco residents have a commute time of 15 minutes or less. Assuming that travel occurs primarily on local roads during peak commute periods, a motor vehicle commute time of 15 minutes or less would be equivalent to about a 30 minute bicycle commute on flat terrain. Given this data, there is a substantial opportunity to convert some of the short distance (less than 15 minute) motor vehicle commute trips to bicycle trips.

Figure 1-2 shows mode-share by census tract, illustrating the current distribution of bicycle commuters in San Francisco, and highlighting geographic areas for potential improvement of bicycle facilities.

THE PLANNING PROCESS

In 1999, San Francisco adopted a “Transit First” policy including a series of principles to be implemented by all officers, boards, commissions and departments. This policy identifies transit, bicyclists and pedestrians as San Francisco’s top transportation priorities. The policy states that “Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.” A wide variety of neighborhood plans, area plans, policy, and development plans also address transportation and multi-modal use of San Francisco’s streets, sidewalks and pathways. Of these, San Francisco’s General Plan Transportation Element is the most important. It contains official City policy on transportation. Other citywide plans need to conform to the General Plan, including this Bicycle Plan.

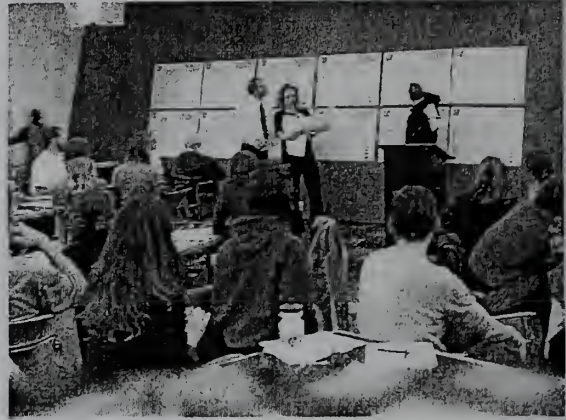
⁵ U.S. Census <http://www.census.gov/acs/www/Products/Ranking/2002/R04T040.htm>

⁶ RAC Foundation for Motoring http://www.racfoundation.org/our_research/Commutepaper.htm

1. INTRODUCTION

Work began on the Bicycle Plan Update in July 2002. The consultants' first tasks were to develop the Supplemental Design Guidelines and the Shared Use Pavement Arrow components of the Bicycle Plan Update. The first public meeting on the overall Bicycle Plan Update was held in February 2003. It kicked off a series of public meetings that spring that discussed the overall Plan, but focused on potential network improvements and the Supplemental Design Guidelines. These meetings were cosponsored by the SFBC. This participation was funded by a Caltrans community planning grant focused on public outreach for potential network improvements.

Public input from this first series of meetings was utilized to generate a list of potential Bicycle Route Network improvements. This list was combined with other existing project lists (remaining recommendations from the 1997 Plan, projects previously recommended by bicycle advocates or members of the public, and improvements recommended through DPT staff analysis). By mid-summer 2003, a prioritization matrix was created and applied to rank this combined recommended project list, yielding a list of approximately 20 potential projects that the consultant would further develop. *(These projects are included in the Network Improvement Document and are noted within Chapter 2 of the Policy Framework.)*



SF Bicycle Plan kick-off meeting at the LGTB Community Center in 2002.

By mid-summer 2003, initial data for the Shared Use Pavement Arrow had been collected and compiled; a draft of the Goals and Objectives for the overall bicycle planning document had been developed, and a draft of the Supplemental Design Guidelines were ready for Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) review. ISCOTT approved the Supplemental Design Guidelines in September 2003. The Goals and Objectives of the overall Plan were finalized in November 2003 by the Bicycle Plan Update's Technical Advisory Committee and the OC. Throughout all of these processes, an active Technical Advisory Committee and OC helped guide and shape the Bicycle Plan Update documents.

By early 2004, the SFBC began outreach to hundreds of individual community groups, seeking input and comments on the potential project concepts that were developed by the consultants. The SFBC then held five highly advertised citywide meetings through the spring of 2004, again focusing on network improvements that were developed by the consultants. In February 2004 the Shared Use Pavement Arrow Report was completed and DPT staff finished compiling the administrative draft of the Bicycle Plan Policy Framework. By spring 2004, the TAC and OC had completed review of the administrative draft Bicycle Plan Policy Framework, and released it for public review at the end of May. Throughout the month of June, the BAC solicited public comment on this draft, and in July they approved the draft Policy Framework. The MTA Citizen's Advisory Council (MTA CAC) made their recommendations on the Bicycle Plan Policy Framework in July. The Supplemental Design Guidelines and Shared Lane Pavement Marking Study are both appendices to the Bicycle Plan Policy Framework. In September 2004 a final citywide meeting was held, presenting the final Bicycle Plan Policy Framework to the public.

The Bicycle Plan: Network Improvement Document will be a culmination of the consultant's work on network improvement concepts and the public input generated by the SFBC's outreach. This portion of the overall planning process will help lay out design concepts that will be used to apply for project funding. It will also provide demonstrated public support and mitigated impacts to other transportation modes. Each project will still need to secure funding and necessary department approvals, environmental clearance, and have detailed engineering plans in place prior to construction.

This process involved a high level of public participation. The SFBC's extensive public outreach resulted in:

- a series of citywide and neighborhood-specific workshops to solicit suggestions for improving the Bicycle Route Network;
- surveys designed to solicit City residents' input on potential Bicycle Route Network improvements, network maintenance needs, bicycle parking needs, and policy and program needs;
- follow up workshops to present proposed network improvements to the neighborhoods; and,
- extensive citywide outreach on specific project proposals to solicit input from merchants, neighborhood groups, and generally interested citizens.

This process involved about 5,000 comments resulting in over 2,800 specific street improvement suggestions, and nearly 2,000 comments related to bicycle policy improvements in San Francisco.

AGENCY RESPONSIBILITY FOR PLAN IMPLEMENTATION

Several key agencies are identified in the recommended action items. The responsibility of each identified agency in implementing the Bicycle Route Network and administering important support functions for bicyclists is summarized below in Table 1-3.

Table 1-3
Agency Responsibility

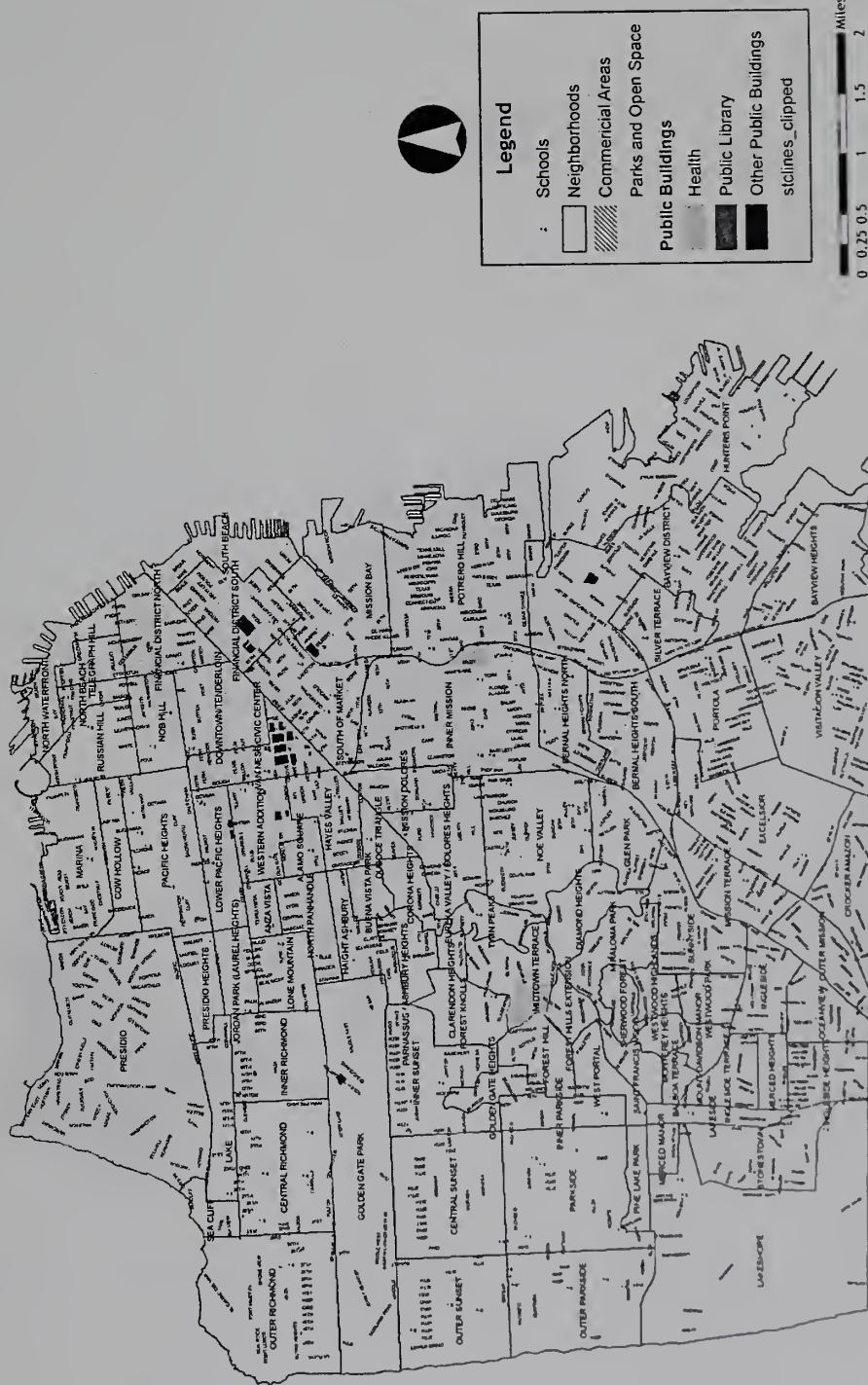
Area of Responsibility	Relevant Agency	Role
Funding	DPT Bicycle Program	Pursues bicycle project and program grant funding from federal, state, regional, and city/county agencies. Works with other departments/agencies to include bicycle components in grants for non-bicycle specific projects.
	SFCTA	Administers and oversees delivery of Proposition K half-cent local transportation sales tax program. Serves as San Francisco Program Manager for Transportation Fund for Clean Air (TFCA) grants, approving funding and selecting projects. Approves funding and Selects projects for other state and federal funding through the Metropolitan Transportation Commission (MTC). Can act as partner applicant/grant seeking agency for funding from other agencies.
Facility Improvements	DPT Bicycle Program	Is lead planning and engineering agency (Bicycle Program staff and other Traffic Engineering staff) for roadway and bicycle facility improvements.
	DPW	Provides engineering and contract management services for bicycle projects involving major construction.
Policy Change	DPT Bicycle Program	Initiates dialog with appropriate departments and agencies including the Planning Department, BOS, etc. to pursue policy change to improve bicycle facilities and programs
Program Development	DPT Bicycle Program	Initiates and administers programs related to bicycle education, promotion, and support facilities such as bicycle parking

	Department of the Environment (SF Environment)	Initiates, implements, and promotes energy saving and resource protection programs for City staff and residents, including air quality, transportation options, etc.
Traffic Enforcement	San Francisco Police Department (SFPD)	Responsible for traffic safety of motorists, bicyclists, and pedestrians through law enforcement
Parking Enforcement	DPT Enforcement Division	Responsible for enforcement of parking regulations, including double parking
Code Enforcement	Planning Department	Responsible for enforcing the Planning Code provisions related to bicycle facilities, including bicycle parking and access to buildings and structures.
Environmental Review	Planning Department	Responsible for review of proposed bicycle projects under the California Environmental Quality Act (CEQA)
General Plan Conformity	Planning Department	Ensures that this Plan and certain bicycle projects are consistent with the General Plan. Updates the General Plan-Transportation Element (see Bicycle Plan Update Chapter 8). Ensures that all other plans are consistent with the General Plan.
Transit Access	San Francisco Municipal Railway (Muni), BART, Caltrain (PJPB), Samtrans, AC Transit, Golden Gate Transit (GGT)	Responsible for management of transit infrastructure and services including provisions for bicycle access to transit vehicles and stations

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Figure 1-1:
San Francisco Overview

Data Source: San Francisco DPW, Planning Department



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Figure 1-7.

Data Source: San Francisco DPW,
DPT, U.S. Census 2000,
Rides for Bay Area Commuters
2003 Commute Profile



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RECOMMENDED ACTION ITEMS

Implementation of this Plan involves participation and the cooperation of many different City departments. In addition to the DPT, recommendations are made that require direct coordination, partnership, analysis, design development and implementation in association with the following departments and other agencies: the Planning Department, the Port of San Francisco, the Recreation and Park Department, DPW, Muni, San Francisco Redevelopment Agency, the Department of Environment (SF Environment), BART, Caltrain, Caltrans, and other transit providers that operate in San Francisco. Implementation actions are identified at the beginning of each chapter and responsible agencies are identified where applicable.

FUNDING

This section describes existing and potential funding sources to implement the various recommendations of this Plan.

GENERAL

Outside funding plays a crucial role in implementing bicycle projects and programs. This is especially true in San Francisco, which unlike other major U.S. cities, does not currently budget any funds from the general fund for the Bicycle Program.

In addition to bicycle-specific funding sources, there are other more flexible funding sources than can be used to fund some bicycle projects and programs. Many of these funding sources can only be used for bicycle projects under very specific conditions and/or in conjunction with other projects.

An excellent and exhaustive list of both bicycle-specific and general funding sources that may be able to be used to fund bicycle projects and programs is the “Guide to Bicycle Project and Program Funding in California,”⁷ Second Edition, by Gail Payne, February 2002 (a combined effort of the California Bicycle Coalition, Caltrans Bicycle Facilities Unit and the Planning and Conservation League Foundation). It provides an update of available bicycle project and program funding sources in California, and identifies key bicycle-related contacts to help obtain federal, state, local and private monies. Several excerpts from that Guide are included throughout the remainder of this section.

The above mentioned funding guide consists of two sections: primary and secondary funding sources. A funding source is designated “secondary” when it only is indirectly related to bicycling, when it may be in jeopardy, or when a minimal amount of funding is available from the source.

A guide to general transportation funding in the San Francisco Bay Area is “Moving Costs: A Transportation Funding Guide for the San Francisco Bay Area,”⁸ published by MTC in January

⁷ The “Guide to Bicycle Project and Program Funding in California” can be viewed online at <http://www.calbike.org/pdfs/guide2.pdf> or by visiting the California Bicycle Coalition’s website at <http://www.calbike.org>. Bound hard copies are available from the California Bicycle Coalition (916) 446-7558) for \$5 each, plus \$10 shipping and handling per order.

⁸ This Guide can be viewed at http://www.mtc.ca.gov/publications/funding_guide/fund_guide.htm/funding_guide01.htm. A printed copy can be ordered by contacting the MTC-ABAG Library (510) 464-7836 or library@mtc.ca.gov

1999, and revised in the spring of 2000. This guide consists of detailed tables summarizing federal, state and local sources of money, indicating the amount available, eligible uses, and potential Bay Area candidates.

Funding sources that have been utilized in the past by the Bicycle Program include:

- BAAQMD Transportation Fund for Clean Air (TFCA)
- Bicycle Transportation Account (BTA)
- Golden Gate Park Concourse Authority
- Transportation Equity Act for the 21st Century (TEA21, ISTEA's successor)
- Office of Traffic Safety (OTS)
- Safe Routes to School (SR2S)
- SFCTA Proposition B (now Proposition K) One-Half Cent Sales Tax
- State Transportation Improvement Program (STIP)
- TDA Article 3 - Various projects

FEDERAL

The most recent federal surface transportation act, the Transportation Equity Act of the 21st Century (TEA-21), was authorized in 1997. TEA-21 retained many of the features of its innovative predecessor called the Intermodal Surface Transportation Efficiency Act (ISTEA), such as providing flexible funding sources that could be used more readily for bicycle, pedestrian and transit projects rather than for the traditional emphasis on highway, streets, and roads projects. In 2003, a successor to the TEA-21 federal transportation act was expected to be authorized. However, as of September 2004, this successor act is still pending before Congress. It is expected to retain the basic structure of TEA-21.

The Funding Guide includes a table (Table 1: Primary Federal Bicycle Program and Project Funding Sources) that summarizes the primary federal funding sources for bicycle programs and projects. The Guide's Figure 1: Federal Transportation Funding summarizes the various TEA-21 programs.

In the Bay Area, much of the federal funding relevant to bicycle projects is funneled through the MTC. On December 17, 2003, MTC approved \$200 million for a new Regional Bicycle and Pedestrian Program for the nine San Francisco Bay Area counties. This program will provide new funding to build bicycle and pedestrian projects of regional significance. Seventy-five percent of the program funds will be given to the county congestion management agencies (e.g. SFCTA for San Francisco) to program the bicycle and pedestrian projects in their jurisdictions while the remaining 25% of the funds will be programmed by MTC through a regional competitive process. The funds were dedicated as part of the Transportation 2030 process (the 2005 RTP), which provides a vision for how all transportation funds will be spent in the San Francisco Bay Area from the years 2005 through 2030.

STATE

The Guide's Table 2 (Primary State Bicycle Program and Project Funding Sources) summarizes the different types of state funding sources available to bicycle projects and programs. The primary state bicycle-related funding sources include BTA, SR2S, and STIP.

A resource that is not shown in the Funding Guide is the San Francisco Bay Area's Regional Transportation Improvement Program (RTIP)⁹. It is the Bay Area's proposal to the State of California for how the region's STIP funds should be spent for transit, state highway, local road, bicycle, and pedestrian projects over the next 20 years. As Congestion Management Agency (CMA) for San Francisco, SFCTA develops the San Francisco list of projects to be funded in the STIP, following MTC's guidelines. As the Regional Transportation Planning Agency (RTPA) for the Bay Area, The MTC is responsible for approval of the region's funding priorities for the STIP, and for submitting the projects to the California Transportation Commission (CTC) by way of the RTIP. Note that due to the State's current budget situation, and its effect on the State Highway Account, there is limited funding available for new projects in the short-term. The development of the 2004 STIP consisted primarily of re-spreading (i.e., delaying) existing projects in the 2002 STIP to the later years of the 2004 STIP, with no new projects being added for San Francisco.

LOCAL/REGIONAL

The Guide's Table 3 (Primary Local/Regional Bicycle Program and Project Funding Sources) summarizes the primary local/regional funding sources, including TDA Article 3, local air district funds, and county transportation sales taxes.

In San Francisco, the SFCTA was created in 1989 to administer Prop K's predecessor, the Proposition B half-cent transportation sales tax program, which began in 1990 and continued until it was superseded by Proposition K, which was approved by 75% of San Francisco voters in November 2003. Prop K contains a new Expenditure Plan and extended the existing half-cent transportation sales tax for 30-years. The SFCTA administers and oversees the delivery of the Expenditure Plan which identifies transportation improvements to be funded from half-cent transportation sales tax. Over the 30-year life of Prop K, the New Expenditure Plan includes \$19.1 million for Pedestrian and Bicycle Facility Maintenance and \$56.0 million for Bicycle Circulation/Safety. Bicycle projects are also eligible for funding when included as part of projects eligible under other Expenditure Plan categories such as traffic calming.

Proposition K calls for the development of 5-year prioritization plans for its programmatic categories (e.g. traffic calming, transit enhancements, bicycle circulation/safety), development of the Strategic Plan (a 10+ year look ahead at Proposition K programming), and allocation of funds to specific projects and programs.

Implementation of the Expenditure Plan relies heavily on leveraging of Prop K funds with other federal, state, and local funds – some of which the SFCTA programs as CMA for San Francisco. SFCTA also selects San Francisco projects for funding with San Francisco's Local Program Manager Funds from the BAAQMD TFCA program. The BAAQMD selects projects through a competitive process for the Regional TFCA funds.

The SFCTA also tracks transportation system performance to ensure that San Francisco gets good value for its transportation investments and prepares a long-range Countywide Transportation Plan to guide future investment decisions.

⁹ <http://www.mtc.ca.gov/funding/rtip-04.htm>

Another San Francisco-specific funding source is the Golden Gate Park Concourse Authority. This body was created in May 1999 as a result of the passage of the Golden Gate Park Revitalization Act of 1998 or Proposition J on the San Francisco ballot. They oversee coordination of construction and improvement projects in the Music Concourse area of Golden Gate Park, including the construction of an underground parking facility. The Concourse Authority has provided funds to the SFBC and the DPT for study of bicycle facility improvements.

NON-TRADITIONAL FUNDING SOURCES

In addition to the traditional funding sources described above, there are also a variety of non-traditional funding sources that might be available for the long term implementation of project and program recommendations contained in this Plan. These include potential grant and foundation opportunities, funding approaches used by several large employers, potential development/redevelopment recommendations, the development of alliances with other organizations and agencies with related bicycle promotion interests, and recommended approaches to more effectively using existing public and private funding available for bicycle related enhancement and maintenance efforts.

Since the Bicycle Program has a very good track record of obtaining traditional types of grants, and since the Proposition K half-cent transportation sales tax program includes more than \$75 million over 30 years for Pedestrian and Bicycle Facility Maintenance and Bicycle Circulation/Safety, it is recommended that the Program continue to optimize the use of existing grant sources and also seek non-traditional funding sources where appropriate. For more information on non-traditional funding sources, please refer to Chapter 4 of the 1997 Bicycle Plan.

Included below are some suggestions for additional sources of bicycle funding that were made in this Plan's public outreach process. They involve political City policy decisions that must be made by the BOS or the voters. The most appropriate body to advocate for these changes is the SFBC.

- The City should dedicate funding for multi-modal transportation and not reduce funding for transportation when there is a City budget crisis; and
- Secure dedicated funding from City's transportation budget for specific bicycle facilities and enhancements.

In addition, the SFCTA can be a resource in helping to identify and advocate for new funding sources. If MTC moves forward with a regional gas tax, the DPT should advocate for an equitable share of the revenues for bicycle projects.

CONSISTENCY WITH STATE REQUIREMENTS FOR BICYCLE PLANS

It is important that this Plan is consistent with California's requirements for bicycle plans. One of the funding sources cited in the Funding Section is the state BTA, which funds city and county projects that improve safety and convenience for bicycle commuters. To be eligible for BTA funds, cities and counties must have a Bicycle Transportation Plan (BTP) that discusses items (a) through (k) in Section 891.2 of the Streets and Highways Code. The city or county local agency governing board must adopt the BTP or certify that it has been updated and complies with Section 891.2 and the Regional Transportation Plan (RTP). The BTP must have been

adopted no earlier than four years prior to July 1 of the fiscal year in which BTA funds are granted. The local agency must submit the BTP to the appropriate Metropolitan Planning Organization (MPO) or RTPA for review and certification that it complies with Section 891.2 of the Streets and Highways Code and the RTP. Following regional approval, the local agency must submit the BTP to Caltrans Bicycle Facilities Unit (BFU) for review and approval.

Table 1-4
Bicycle Transportation Account (BTA) Requirements Checklist

BTA Requirement	Page(s)
1. Existing and Future Bicycle Commuters	1-6 through 1-15
2. Land Use Map/Population Density	1-13
3. Existing and Proposed Bikeways	2-4 through 2-46
4. Existing and Proposed Bicycle Parking Facilities	3-1
5. Existing and Proposed Multi-Modal Connections	4-1 through 4-6
6. Existing and Proposed Changing and Storage Facilities	7-4, 7-5
7. Bicycle Safety and Education Programs	5-1 through 5-10
8. Citizen Participation	1-2, 1-3
9. Consistency with Transportation, Air Quality, and Energy Plans	1-1, 1-3
10. Project Descriptions/Priority Listings	2-10 through 2-18
11. Past Expenditures and Future Financial Needs	1-17

CONTENTS OF THIS POLICY PLAN

SUMMARY OF CHAPTERS

This Plan contains the following chapters:

CHAPTER 1: INTRODUCTION

The Introduction describes the two major components of the 2004 Bicycle Plan Update planning process: the Policy Framework and the Network Improvement Document. The chapter continues with an introduction to San Francisco land use, an overview of the City's demographics, a brief history of the extensive planning process conducted for this Plan, a list of agency responsibilities related to Plan implementation, and a discussion of bicycle project funding.

CHAPTER 2: BICYCLE ROUTE NETWORK

The Bicycle Route Network Chapter provides an overview of recommended improvements to the citywide Bicycle Route Network, a discussion of facility types, and a summary of the ISCTT-adopted Supplemental Design Guidelines to the Plan (that provide new design standards for bicycle facilities). Chapter 2 sets the stage for implementation of specific project improvements and outlines potential projects to be further defined in the Network Improvement Document.

CHAPTER 3: BICYCLE PARKING

The Bicycle Parking Chapter provides an overview of the existing Planning Code governing provision of bicycle parking for public and private buildings and garages and recommends improvements for administration and enforcement, as well as providing new guidelines for implementation of bicycle parking throughout the City.

CHAPTER 4: TRANSIT AND BRIDGE ACCESS

The Transit and Bridge Access Chapter addresses the linkages between bicycle trips and transit service, as well as bicycle access to local and regional bridges. By improving bicycle access to transit vehicles and stations, many opportunities are created for increased bicycle trips. This chapter contains recommendations for creating greater bicycle access to Muni and other transit agencies' vehicles and to existing and future transit stops and stations.

CHAPTER 5: EDUCATION

The Education Chapter provides an overview of the City's bicycle educational outreach efforts. It recommends creating a comprehensive set of general and targeted DPT cycling safety classes and workshops. The Education Chapter addresses several aspects of bicycle safety for bicyclists, motorists, and City staff to ensure that all parties are aware of cyclists' rights and responsibilities.

CHAPTER 6: ENFORCEMENT AND SAFETY

The Enforcement Chapter summarizes existing traffic violations and collisions involving bicyclists and makes recommendations for improved enforcement. To improve safety for

bicyclists throughout the City, the recommendations focus actions related to both motor vehicle and bicycle traffic violations.

CHAPTER 7: PROMOTION

The Promotion Chapter focuses on attracting new bicyclists to the streets of San Francisco, keeping existing bicyclists on the road, and generally promoting awareness of the benefits that increased bicycle usage holds for the City.

CHAPTER 8: GENERAL PLAN AMENDMENTS, ENVIRONMENTAL REVIEW, AND CITYWIDE COORDINATION GOALS, OBJECTIVES, AND ACTION ITEMS

The General Plan Amendments, Environmental Review, and citywide Coordination Chapter addresses many elements that are relevant to bicycle policy consistency. This chapter focuses on recommended modifications to the General Plan's Transportation Element, Downtown Area Plan, and to the city's environmental review guidelines.

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2. BICYCLE NETWORK

BICYCLE NETWORK GOALS AND OBJECTIVES

Goal:

Refine and Expand the Existing Bicycle Network.

Objectives:

- Provide safe space for bicyclists through a comprehensive network of bikeways that are appropriately signed, marked, and/or traffic-calmed. Ideally, the facilities would include on-street routes, marked bicycle lanes, and off-street bicycle paths;
- Utilize innovative designs, where appropriate, to improve bicycle usage and safety; and
- Ensure that the Bicycle Route Network:
 - allows bicycle access within a quarter mile of major commercial and residential areas;
 - provides access to all San Francisco Municipal Railway (Muni) metros, Bay Area Rapid Transit (BART), and Caltrain stations, ferry terminals, and other major transit hubs; and
 - is well signed.

RECOMMENDED BICYCLE ROUTE NETWORK ACTIONS

City staff should prioritize the following actions to implement the recommended additions to the Bicycle Network:

Action 2.1

Complete the Bicycle Plan: Network Improvement Document.

Action 2.2

Update the Official Bicycle Route Network Map to reflect route relocations, and periodically update the Bicycle Route Network identified within the San Francisco General Plan.

Action 2.3

Complete the required design and engineering for improvements to Recommended Study Streets and implement, if feasible, according to the Department of Public Works (DPW)'s Five Year Proposed Paving Plan.

Action 2.4

Implement the Transit First Policy's bicycle and transit elements.

Action 2.5

Conduct a before and after study on the impacts of allowing bicycles in new or existing exclusive bus lanes that are identified from a joint Muni-DPT selection process.

Action 2.6

Amend Traffic Code Section 31 to allow bicyclists in exclusive right-curb bus lanes on two-way streets.

Action 2.7

Review multi-lane streets with excess capacity, such as those with less than 600 vehicles per lane per peak-hour, for possible lane removal to accommodate bicycle lanes or other bicycle-friendly treatments.

Action 2.8

Adopt the San Francisco County Transportation Authority (SFCTA) technical working group's recommended revisions to San Francisco's level of service (LOS) standards and methodologies such that they better respond to the multimodal nature of San Francisco's transportation system, specifically addressing bicycles.

Action 2.9

Define and identify "bicycle arterial streets," conduct public outreach, and seek a Municipal Transportation Agency (MTA) policy decision to modify the Traffic Calming Guidelines.

Action 2.10

Implement Supplemental Design Guidelines on specific Recommended Network Improvement projects with the appropriate level of analysis and study.

Action 2.11

Prioritize phased application of the Shared-Use Pavement Arrow on appropriate existing signed bicycle routes, wide curb lanes, and newly designated routes where bicycle lane implementation is demonstrated to be infeasible.

Action 2.12

Develop and enforce a set of standards that must be strictly adhered to by contractors for street excavation restoration, including a guarantee of one year for replacement of any defective work.

Action 2.13

Amend DPW's guidelines to allow acceptance of a City street due to its inclusion on the Bicycle Route Network, subject to Board of Supervisor approval.

Action 2.14

Create a prioritized citywide bicycle pathway inventory that would include: surface condition; signing and lighting status; required maintenance or improvements needed; and the agency responsible for each path.

Action 2.15

Maintain a minimum of a weekly sweeping schedule (DPW and the Recreation and Park Department) - especially for off-street paths that are not currently cleaned on a regular schedule - in addition to sweeping bikeways whenever there is an accumulation of debris such as gravel, glass, and sand.

Action 2.16

Increase the profile of the Bicycle Route Network within DPW's street resurfacing and paving prioritization process.

Action 2.17

Create an inventory of locations along the Bicycle Route Network that intersect or run parallel to railroad tracks. Appropriate measures should be undertaken to mitigate the impacts of the track crossings to bicyclists. Removal of unused tracks along the Bicycle Route Network should also be undertaken.

INTRODUCTION

Action 2.1 Complete the Bicycle Plan: Network Improvement Document.

The existing Bicycle Route Network is the result of many years of work by the Department of Parking and Traffic (DPT) Bicycle Program, San Francisco Bicycle Coalition (SFBC), the Bicycle Advisory Committee (BAC), and many other agencies and organizations. The Bicycle Route Network, included as part of the San Francisco General Plan's Transportation Element, is therefore a component of the City's official transportation policy. A goal of this Plan is to improve and expand the existing Bicycle Route Network in a meaningful way to increase safe space for bicyclists Citywide and to improve the visibility of the Network on San Francisco's primary collector and arterial streets. As changes to the network occur, periodic updates of the Bicycle Route Network within the San Francisco General Plan should occur.¹

The first chapter of this Plan outlines the two components of the overall Bicycle Plan (Policy Framework and Network Improvement). This chapter outlines a "blueprint" of potential projects that will be included within the Network Improvement Document.

The potential projects listed within this chapter fall into two general categories: those that are part of the existing Bicycle Network, and those that are not. Additionally, where extensive multi-jurisdictional participation will be required, or where broader issues (extensive parking loss, changes in land use, immitigable impacts to transit operations, streetscape reconfiguration, etc.) exist, Study Areas are recommended.

¹ Recommended amendments to the San Francisco General Plan can be found in Chapter 8 of this document.

This chapter does not attempt to identify specific facility types for improvements or additions to the Bicycle Route Network. As part of the more extensive Network Improvement Document, potential projects will be brought to the Municipal Transportation Agency (MTA) Board and the Board of Supervisors (BOS) after the required environmental clearance is obtained. This chapter provides a framework for the overall existing Bicycle Route Network and a general list of potential projects and areas to be studied. This chapter does not recommend specific facilities (wide outside lanes, bike lanes, or bike paths); rather, the appropriate facility types will be determined when a particular project is studied.

EXISTING BICYCLE ROUTE NETWORK

Historically, San Francisco bicycle facilities were placed only on streets where potential conflicts with other competing demands were minimal. As the 1997 Bicycle Plan was implemented, bicycle facilities were increasingly located on high-volume, complex streets that provide greater access to the places cyclists want to go. Recent San Francisco bicycle projects, such as the bicycle lanes on Fell, Valencia and Polk Streets², exemplify the planning and design challenges, as well as the benefits for bicyclists, when major transportation corridors are retrofitted.

The existing Bicycle Route Network, established by the 1997 San Francisco Bicycle Plan and subsequent implementation projects completed since adoption of that Plan, is shown in Figure 2-1. A summary of the total miles of each bicycle facility type as of 2002 is shown in Table 2-1.

Table 2-1
San Francisco Bicycle Network

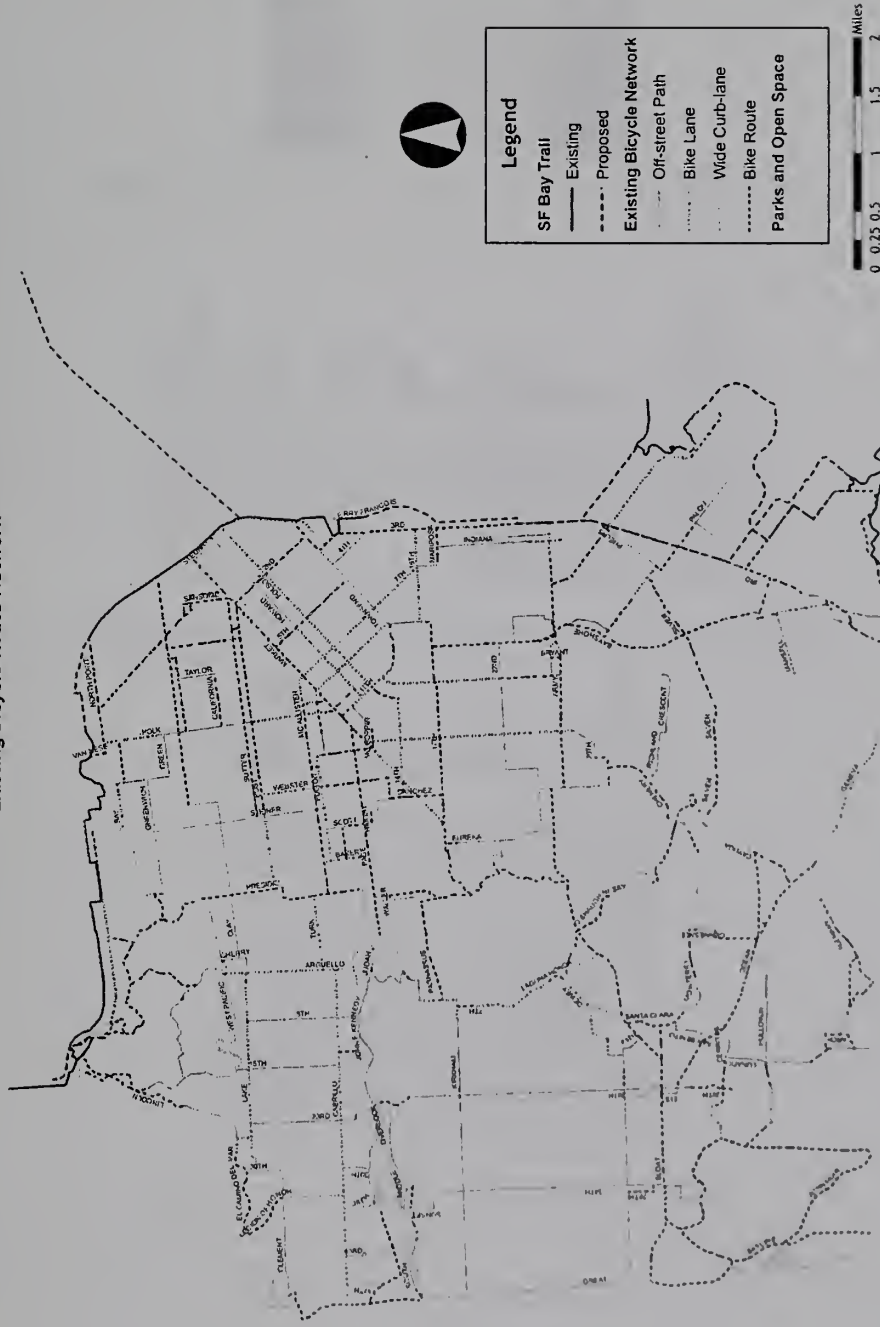
Facility Type	Mileage Total *
Bicycle Lane (Class II)	34 miles
Bicycle Path (Class I)	29 miles
Bicycle Route+ (Class III)	88 miles
Wide Curb Lane+ (Class III)	54 miles
TOTAL	205 miles

* This is the approximate number of miles of City streets with bicycle facilities and not the actual number of miles of bicycle facilities i.e.: It is not 34 miles of bicycle lanes, but 34 miles of City streets with bicycle lanes (whether a two-way street with bicycle lanes in each direction or a one-way street with a bicycle lane in only one direction). For reference, San Francisco has a total of 1,088 miles of streets.

+ Bicycle routes and streets with wide curb lanes are signed as bicycle routes, but do not have bicycle-specific pavement striping.

² The Fell, Valencia and Polk Street Reports can be found on the Bicycle Program's website under "Reports and Studies"
http://www.bicycle.sfgov.org/site/dptbike_index.asp?id=18784

Figure 2-1:
Existing Bicycle Route Network



Data Source: San Francisco DPW, DPT

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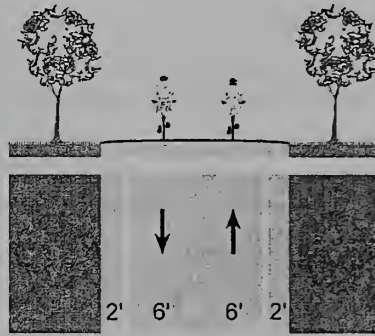


Figure 2-2: Class I - Bicycle Path or Multi-Use Trail

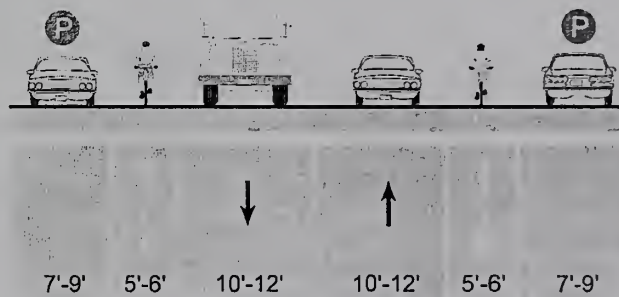


Figure 2-3: Class II - Bicycle Lane Adjacent to Parking

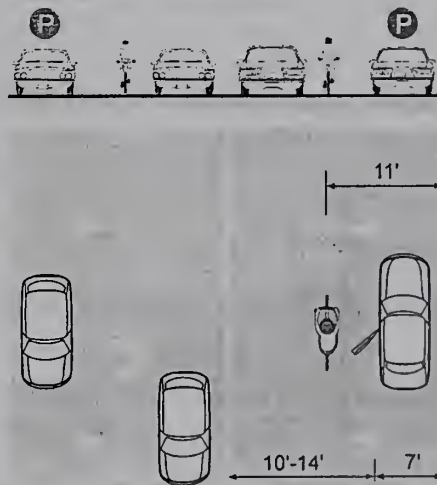


Figure 2-4: Class III - Signed Bicycle Route

BICYCLE NETWORK FACILITY TYPES

The existing Bicycle Route Network is composed of Class I³, II, and III facilities. Typical cross sections of these facility types are shown in Figures 2-2 through 2-4 above. Class III bicycle facilities may consist of a variety of treatments including streets with: wide curb lanes, shared-use pavement arrow markings, traffic calming measures, or simply signed streets. Additional details on these and proposed new facility types can be found in Appendix A: Supplemental Design Guidelines.

A facility enhancement that could improve the Bicycle Route Network is the shared-use pavement arrow marking. While this chapter does not make recommendations as to facility type, it should be noted that shared roadways on the Bicycle Route Network could be significantly improved now that the shared-use pavement arrow marking has been approved by the California Traffic Control Device Committee (CTCDC).

CHANGES TO THE EXISTING BICYCLE ROUTE NETWORK

Action 2.2

Update the Official Bicycle Route Network Map to reflect route relocations, and periodically update the Bicycle Route Network identified within the San Francisco General Plan.

The existing Bicycle Route Network Map is managed and identified in within the City of San Francisco Geographic Information System (GIS), and is shown on the existing official published Citywide bicycle user map. Most importantly, the 1997 Bicycle Route Network designated within the San Francisco General Plan's Transportation Element needs to be updated to reflect significant modifications that have occurred since the 1997 Plan. The primary reasons for these Bicycle Route Network modifications are:

- relocations of the official numbered Bicycle Route Network from an existing street location or segment to a new location;
- the addition of the official Bicycle Route Network designation to existing bicycle facilities; and
- removal of the official Bicycle Route Network designation from temporary or outdated facilities recommended in the 1997 Bicycle Plan that have since been made obsolete by new or improved facilities elsewhere.

The above modifications to the existing Bicycle Route Network are presented in Table 2-2, and are also depicted in Figure 2-5. As changes to the network occur, periodic updates of the Bicycle Route Network within the San Francisco General Plan should occur.

³ Multi Use Trails can also accommodate pedestrians. However, the California Highway Design Manual recommends that if large pedestrian volumes are expected, then separate facilities for pedestrians be developed.

Table 2-2
Changes to the Existing Bicycle Route Network

Street or Path	From	To	Rationale for Network Change
Network Relocations			
Alemaný Boulevard ⁵	San Jose Avenue	Bayshore Boulevard	Addition as part of this planning effort
Fell Street	Scott Street	Baker Street	Addition of striped bicycle lane creates an extension of the "Wiggle" ⁴ ; Route 30 will be shifted from Hayes Street to Fell Street
Hayes Street	Scott Street	Baker Street	Relocation to Fell Street
Palou Avenue	Newhall Street	Phelps Street	Relocate Route 170 from Palou Avenue and Phelps Street to Oakdale Avenue in conjunction with new bike lanes and a pedestrian plaza on Oakdale Avenue.
Palou Avenue	Third Street	Newhall Street	
Phelps Street	Oakdale Avenue	Palou Avenue	
Third Street	Terry Francois Boulevard	Cargo Way	Removed from 3rd Street due to Light Rail construction. Also see Illinois Street.
Removal of Interim 1997 Network Designations			
Alemaný Boulevard	Arch Street	Saint Charles Avenue	1997 Plan, p. 3-36 discusses Route 75 interim measure that is no longer necessary. It is being eliminated because the St. Charles Path was reconstructed and a traffic signal installed to improve bicycle circulation through this area.
Arch Street	Alemaný Blvd	Randolph Street	
Randolph Street	Arch Street	Saint Charles Avenue	

⁴ The "Wiggle" is the name local bicyclists have given to the relatively flat bicycle route connecting Market Street at Duboce Avenue to the Panhandle. It avoids hills by "wiggling" with many turns along various streets.

Addition of Network Designation to Existing Facilities			
Avenue of the Palms	Perimeter Path	Avenue of the Palms	Treasure Island addition
Dolores Street	30 th Street	San Jose Avenue	Improvement in conjunction with San Jose Avenue improvements provides bicycle route through a lane drop and lane shift
Golden Gate Avenue	Parker Street	Baker Street	New bicycle lanes striped creating a rerouting of Route 20
Illinois Street ⁵	16 th Street	Cargo Way	Routes changed due to implementation of 3rd Street light rail
Industrial Street	Oakdale Street	Loomis Street	Network improvements addition to Route 25
Loomis Street	Industrial Street	Bayshore Boulevard	Network improvement additions to Route 25
Perimeter Path	Avenue of the Palms		Treasure Island addition
San Jose Avenue ⁵	Dolores Street	Chenery Street	Route 45 addition
Terry Francois Boulevard	3rd Street	Illinois Street	Addition to the Illinois Street route - relocation from Third Street.

RECOMMENDED IMPROVEMENTS TO THE EXISTING BICYCLE ROUTE NETWORK AND STUDY AREAS

As outlined in Chapter 1 - Introduction, a list of potential projects created from extensive public comments, staff analysis, remaining, unimplemented projects from the 1997 Bicycle Plan, and public workshops and surveys resulted in more than 2,800 suggestions. Public suggestions were categorized and prioritized by the City and consultants for inclusion within this chapter, but also for a more thorough discussion within the Network Improvement Document.

These recommended improvements could include bike lanes, shared lane arrow markings, traffic signal timing improvement, and path resurfacing. Specifics of the potential improvements and studies will be identified within the Network Improvement Document.

The appropriate improvements will vary according to each street's specific condition. Designs from the California Highway Design Manual and the City's Supplemental Design Guidelines (Appendix A) are approved for application to a street, subject to review by DPT and approval through the normal BOS legislative process, where required. Other improvements or variations on these approved designs may be considered for trial application after review by the

Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) and after the necessary environmental approval is obtained.

Table 2-3 and Figure 2-5 present recommended improvements and study areas for the existing Bicycle Route Network.

Table 2-3
Recommended Improvements and Study Areas for the Existing
Bicycle Route Network

Street or Path	From	To	Existing Bicycle Route Number
11 th Street	Market	Mission	25
14th Street ⁵	Market	Dolores	30
19th Avenue ⁵	Buckingham	Holloway	75
20th Street	Wawona	Irving	75
22nd Street	Valencia	Potrero	44
23rd Street	Valencia	San Bruno	n/a
2nd Street ⁵	Market	King	11
34th Ave Path	Polo Field Path	Lincoln Way	85
5th Ave Path	Martin Luther King	Lincoln Way	65
5th Street ⁵	Market	Townsend	19
7th Avenue	Kirkham	Lawton	65
Alemany/Silver Corridor	*	*	*
Battery East Path	Lincoln Boulevard	Golden Gate Bridge	202
Battery Street	Embarcadero	Market	n/a
Bay Bridge	*	*	*
Bayshore Corridor ⁵	*	*	*
Bayview/Hunters Point	*	*	*
Bosworth/O'Shaughnessy Streets	San Jose	Portola	55

2. BICYCLE NETWORK

Street or Path	From	To	Existing Bicycle Route Number
Broadway ⁵	Hyde	Mason	10/210
Cayuga Street	Geneva	Lyell	45
Cesar Chavez Corridor ⁵	*	*	*
Chain of Lakes	Fulton	John F Kennedy	730
Cheery Street	30th	Elk	45
Columbus Street	Washington	Beach	11
Conservatory West	Arguello	John F Kennedy	65
Corbett Street	Clayton	Market	40/50
Division Street	King	11th	36
Embarcadero Promenade	North Point	King	5
Eureka Valley/Mission Corridor (16 th /17 th Streets) ⁵	*	*	*
Evans Avenue	3 rd Street	Cesar Chavez	68
Fell Street			30
Fisherman's Wharf	*	*	*
Fort Mason Tunnel	Aquatic Park	Laguna	2
Geneva Avenue	Mission	San Jose	90
Greenwich Street	Van Ness	Lyon	6
Grove Street	Van Ness	Polk	20
Holloway Avenue	SF State	City College	90
Horseshoe Court Path	Fulton	Conservatory East	765
Indiana Street	23 rd Street	Cesar Chavez	7
John F Kennedy	Great Highway	Stanyan	30
Kirkham Path	Lower Great Highway	Great Highway	40
Kirkham Street	6 th Avenue	Great Highway	40

Street or Path	From	To	Existing Bicycle Route Number
Laguna Honda Boulevard ⁵	Clarendon	Woodside	65
Lake Merced Boulevard	Skyline	John Muir	85/86/885
Lake Merced Path			91/95
Lake Street	3 rd Avenue	Arguello	10
Lyell Street	Alemany	Bosworth	45
Marina Boulevard	Laguna	Lyon	2
Mariposa Street	Pennsylvania	Indiana	23
Market Street ⁶	Steuart	Octavia	50
Market Street ⁵	Octavia	17th	50
Masonic Corridor ⁵	*	*	*
McAllister Street	Market	Masonic	20
Mission Creek Bikeway	16 th Street	4 th Street	n/a
Mission Street	Embarcadero	14 th Street	n/a
Monterey Boulevard	San Jose	Junipero Serra	70
Oakdale Avenue ⁵	3 rd Street	Bayshore	170/07
Ocean Boulevard	Mission	Junipero Serra	84/90
Octavia Corridor ⁵	*	*	*
O'Shaughnessy Path	Portola	Bosworth	55
Page Street	Stanyan	Market	32
Panhandle Path	Ashbury	Clayton	30
Panhandle Path	Baker	Baker	30

⁵ These corridors may require additional study and the further involvement of numerous City agencies and other jurisdictions. These potential projects received priority attention by the consultant team and the SFBC. Early design concepts were developed so that the SFBC could begin early outreach on these potential projects. This work will be reflected within the Network Improvement Document.

⁶ The SFCTA examined pedestrian, bicycle, and vehicle circulation issues along Market Street. An Action Plan was developed describing a series of complementary, low cost improvements that could be implemented in the next one to five years. The full report can be found at <http://www.sfcta.org/marketstreet.htm>

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Street or Path	From	To	Existing Bicycle Route Number
Point Lobos Street	Great Highway	48 th Avenue	95
Polk Street ⁵	Market	McAllister	25
Polo Field Bicycle Path	Polo Field	34 th Ave Path	85
Portola Way ⁵	Corbett	Sloat	50
Post Street	Market	Steiner	16
Presidio Boulevard	Pacific	Geary	55
Romain Overpass	Market Street	Market Street	44
San Jose Corridor	*	*	*
Silver Avenue	Alemany	Oakdale	70
Sloat Boulevard	19 th Avenue	La Playa	50
Stockton Street	Broadway	Market	17
Sunset Path	Ocean	Lake Merced	85/86
Sutter Street	Fillmore	Market	16
The "Wiggle"	Church	Page	30
The Embarcadero	Northpoint	Taylor	n/a
Townsend Street ⁵	Embarcadero	Division	36
Transbay Terminal	*	*	*
Treasure Island and Yerba Buena Island	*	*	*
Vicente Path	Lower Great Highway	Great Highway	60
Webster Street	Duboce	Grove	345
Winston Drive	Junipero Serra	Lake Merced	86
Woodside Avenue	Laguna Honda	Portola	60

* Denotes recommended study areas. These projects may trigger extensive environmental reviews and must be addressed in a much broader planning context, due to the complexity of the projects and the involvement and responsibilities of numerous City agencies and other jurisdictions. For each study area, it is recommended that a complete transportation study be conducted once funding is secured.

RECOMMENDED STUDY STREETS FOR POTENTIAL INCLUSION IN THE BICYCLE ROUTE NETWORK

Action 2.3 Complete the required design and engineering for improvements to Recommended Study Streets and implement, if feasible, according to the Department of Public Works (DPW)'s Five Year Proposed Paving Plan.

The streets listed in Table 2-4 should be studied for potential inclusion in the Bicycle Route Network. These streets are also depicted in Figure 2-5. This list will be prioritized to correspond to the DPW's Five Year Proposed Utility Excavation and Paving Plan. As streets are being resurfaced, bicycle improvements to those streets should be studied for concurrent implementation.

As stated above, this list was shaped by extensive public comments, public workshops, and surveys resulting in more than 2,700 suggestions. Public suggestions were categorized and prioritized by the City and consultants for inclusion within this chapter, but also for a more thorough discussion within the Network Improvement Document. The major difference between the following list and the one above is that the following list contains streets that are not part of the current bicycle network.

Table 2-4
Recommended Study Streets for Potential
Inclusion In the Bicycle Route Network

Street Name	From	To
18 th Street	Diamond Street	Harrison Street
25 th Avenue	Lincoln Way	Kirkham Street
Baker Street	Turk Street	Sacramento Street
Brannan Street	Embarcadero	Division Street
Broderick Street	Francisco Street	Marina Boulevard
Brotherhood Way	Lake Merced Boulevard	Arch Street
California Street	Masonic Avenue	Van Ness Avenue
Capp Street	26 th Street	15 th Street
Circular Avenue	Monterey Boulevard	Havelock
Duboce Park Path	Noe	Waller
Fremont Street	Howard Street	Harrison Street

2. BICYCLE NETWORK

Street Name	From	To
Geary Boulevard ⁷	Divisadero Street	25 th Avenue
Golden Gate Avenue	Baker Street	Market Street
Kearny Street	Market Street	Columbus Avenue
Mansell/Persia Street	Mission Street	University
Noriega Street	La Playa Street	19 th Avenue
Oak Street	Scott Street	Baker Street
O'Farrell Street	Polk Street	Market Street
Pacific Avenue	Polk Street	Steiner Street
Shotwell Street	14 th Street	26 th Street
Stanyan Street	Fulton Street	Frederick Street
Union Street	Steiner Street	Van Ness Avenue
Washington Street	Embarcadero	Columbus Street

⁷ When Geary Boulevard is studied for potential inclusion in the Bicycle Route Network, this should be done as part of a larger Geary Boulevard Bus Rapid Transit (BRT) study.

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BICYCLE AND TRANSIT POLICY

Action 2.4 Implement the Transit First Policy's bicycle and transit elements.

San Francisco's Transit First Policy supports pedestrians and bicycles in addition to transit as important non-automobile components of a balanced transportation system. This discussion of bicycle facilities on transit routes and the related section in the Supplemental Design Guidelines address the operational complexities identified by City staff when planning for shared street use by transit vehicles and bicyclists. It should be noted that San Francisco's "Transit First" Policy (Section 16.102 of the City Charter) includes the following:

- "Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile;"
- "Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit;" and
- "Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking."

MTA planning, such as that outlined in Muni's Vision for Rapid Transit, guides implementation of the Transit First Policy. Bicycle projects on Muni routes should be considered on a case-by-case basis with good technical analysis and mitigation measures appropriate to each particular situation. Implementation of this document is one of the ways of implementing the Transit First policy.

The challenge for the MTA is to prioritize transit and bicycle projects, while accommodating the flow of other people and vehicles. MTA staff encourages this Plan's general vision to increase the number of daily bicycle commute trips in San Francisco to 10% by 2010. MTA staff will do everything possible to ensure that impacts of bicycle projects on transit are successfully mitigated. The MTA is focused on enhancing the existing bicycle network to create a truly complete and robust network. One of the benefits of a bicycle network is that it generally has excess capacity, so that bicycle ridership can grow dramatically without expansion of the infrastructure. The MTA will look to implementation of actions in this Plan to increase the bicycle transportation mode split.

Appropriate agencies should work closely together to identify and mitigate, where possible, any significant negative impact on transit that could potentially result from a bicycle improvement project. Working together to create world class facilities for both transit riders and bicyclists will result in greater mode shifts to more sustainable forms of transportation, which would ultimately benefit both transit riders and bicyclists.

When bicycle facilities are proposed on streets where non-Muni transit service is operated (such as Samtrans or Golden Gate Transit), DPT should work with these transit agencies.

BICYCLE FACILITIES ON TRANSIT ROUTES

The purpose of this section is to provide a preliminary framework to guide Muni, DPT, the Planning Department, and other agencies in the selection of specific streets for shared Muni and bicycle use (when other streets are not viable or less preferable for bicycle facilities).

When a bicycle facility or project is proposed for an existing transit route, the DPT Bicycle Program staff will review existing transit operations data. They will then present Muni Planning staff with a project description to initiate a project-specific review and identify specific data needs. Muni and DPT staff will work collaboratively to determine the agreed upon specific steps required to demonstrate project viability. Muni Planning staff will be available to present data and assist in any analysis.

It is very important that Muni and DPT agree on the required technical analysis and on the appropriate “before” and “after” data for each particular situation being analyzed. Both agencies, therefore, will gather agreed-upon data. This data will be used to provide definitive evidence about the degree, if any, that bike lanes affect Muni performance and if bicycles and transit vehicles can coexist well on the particular street under consideration.

A proposed bicycle facility should not create significant negative impacts to transit operations (i.e.: transit travel times or schedule adherence). However, the project’s bicyclists’ safety improvements must also be considered. Mitigation measures (along the proposed bicycle facility or elsewhere along a Muni route) should be implemented where possible to encourage minimal transit service degradation and transit service improvements, while improving the bicycling environment along the corridor.

If significant transit impacts are identified, but the project will also make a significant improvement in bicyclists’ safety (based upon similar bicycle facility projects), then the decision on project implementation will need to be made by the appropriate City policy-makers. The MTA looks to the BOS and the Mayor’s Office to support the MTA’s efforts to effectively implement the Transit First policy.

Figure 2-7 shows corridors having potential opportunities and/or constraints for shared bicycle and transit facilities. This map should be consulted when planning bicycle facilities. Figure 2-8 shows existing transit stations and transit priority streets. This map should also be consulted when planning bicycle facilities.

BICYCLES AND TRANSIT DESIGN GUIDELINES

The Supplemental Design Guidelines (Appendix A or www.bicycle.sfgov.org) should be followed for shared bicycle and transit facilities. Additional transit related diagrams may be added in the future to the Supplemental Design Guidelines as required.

ALLOWING BICYCLES IN BUS-ONLY LANES (“EXCLUSIVE BUS LANES”)

Action 2.5 Conduct a before and after study on the impacts of allowing bicycles in

new or existing exclusive bus lanes that are identified from a joint Muni-DPT selection process.

Action 2.6

Amend Traffic Code Section 31 to allow bicyclists in exclusive right-of-way bus lanes on two-way streets.

Various cities around the world have engineered shared bus/bicycle lanes to afford both transportation modes with dedicated space separate from motor vehicle traffic on city streets. While this may improve conditions for bicycles and transit by reducing conflicts with automobiles, it also has the potential to increase conflicts between bicycles and buses; therefore, safety issues must be thoroughly addressed. (See Action 5.8 in Chapter 5 for a further discussion of bicycle and bus safety issues.) This Plan incorporates a general standard for shared bus/bicycle lanes in the Supplemental Design Guidelines and brings San Francisco closer to implementation of such facilities.

Shared bus/bicycle lanes represent only one design solution. Many streets can accommodate bus transit service and dedicated bicycle facilities. This more typical arrangement has been thoroughly discussed during the development of this Plan and many of the engineering challenges have been addressed in the Supplemental Design Guidelines.

TC (Section 31) establishes exclusive bus lanes with the intent of excluding other vehicles, including bicycles from using them. Additions, deletions, or changes to exclusive bus lanes must be legislated by the BOS. It should be noted that “exclusive bus lanes” are often designated as the far right traffic lane, which is where bicyclists are required by law to ride⁸. This can create confusion for bus operators, bicyclists and motorists. It is suggested, pending the results from a trial program, that legislation be drafted to allow bicyclists in exclusive bus lanes, when it is a far right lane. Since the California Vehicle Code (CVC) permits cyclists to ride near the left-hand curb of a one-way street with at least two traffic lanes, it is recommended that any amendment to TC Section 31 only apply to two-way streets.

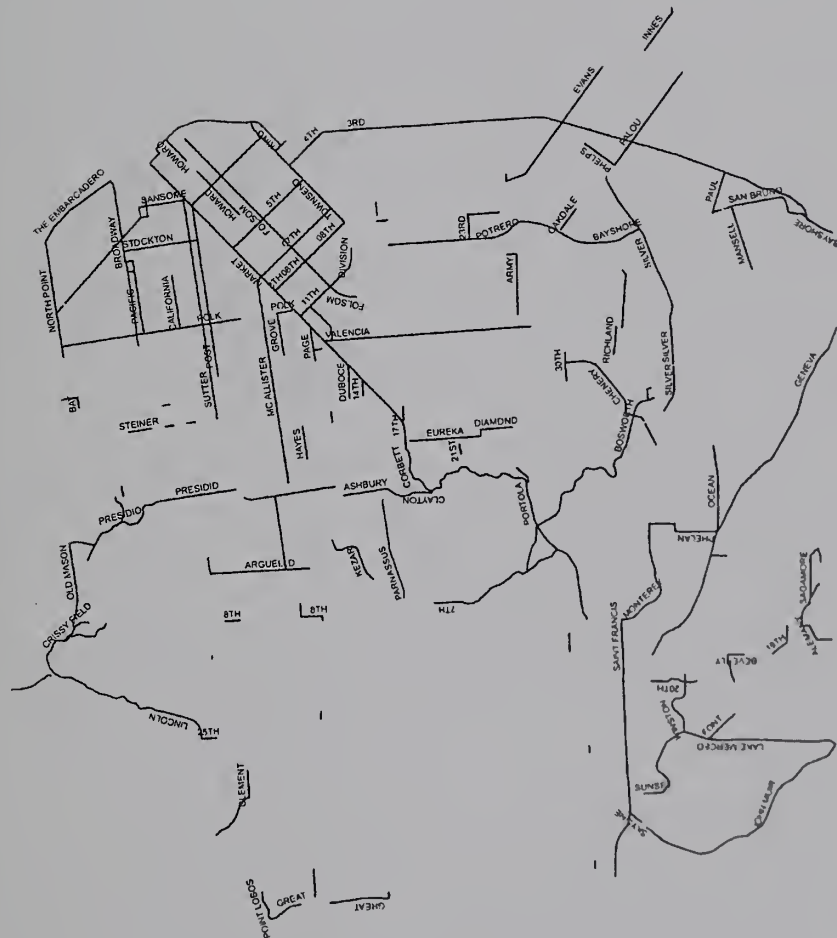
Additionally, on a case-by-case basis, officially designated, signed bus/bike lanes should be established for routes where needed as described in the Supplemental Design Guidelines.

8 CVC 21602. (a) Any person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

- (1) When overtaking and passing another bicycle or vehicle proceeding in the same direction.
- (2) When preparing for a left turn at an intersection or into a private road or driveway.
- (3) When reasonably necessary to avoid conditions (including, but not limited to, fixed or moving objects, vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes) that make it unsafe to continue along the right-hand curb or edge, subject to the provisions of Section 21656. For purposes of this section, a “substandard width lane” is a lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the lane.
- (4) When approaching a place where a right turn is authorized.
- (b) Any person operating a bicycle upon a roadway of a highway, which highway carries traffic in one direction only and has two or more marked traffic lanes, may ride as near the left-hand curb or edge of that roadway as practicable.

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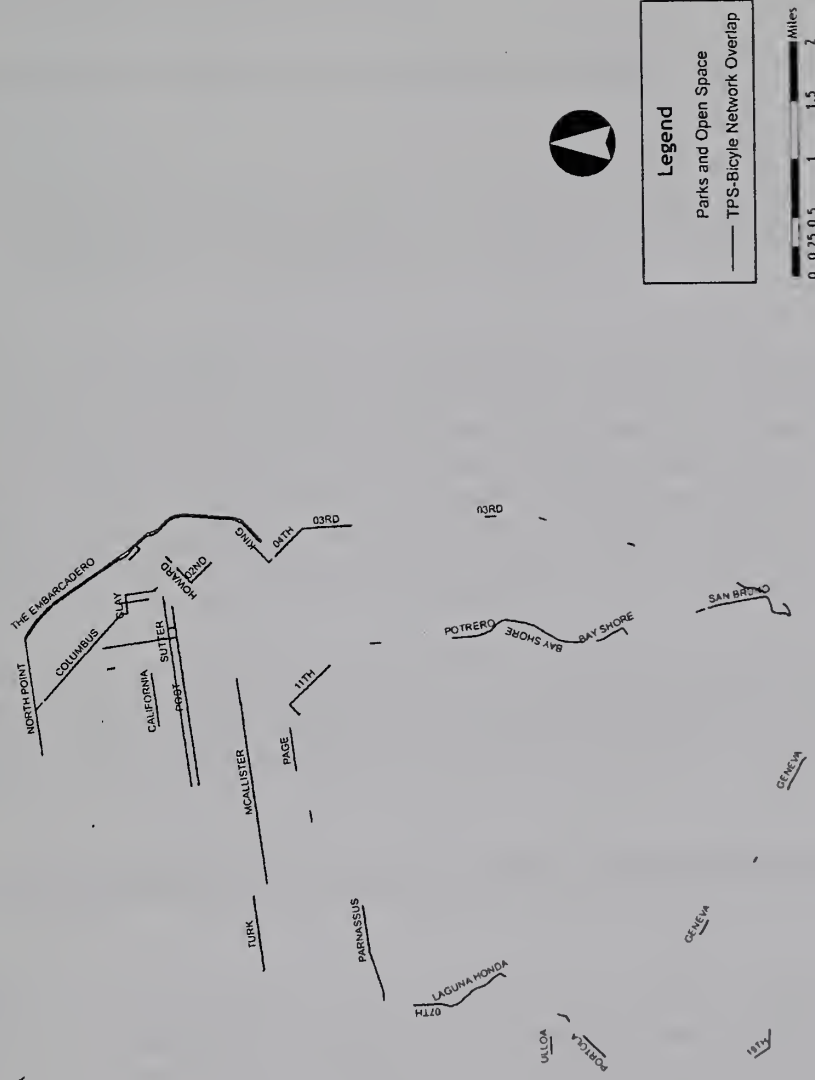
Figure 2-6:
Overlap of Existing Bicycle Network and Transit Corridors



Data Source: San Francisco DPW, SFCTA

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Figure 2-7:
Overlap of Existing Bicycle Network and Transit Priority Streets



Data Source: San Francisco DPW, SFTA

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ADDITIONAL CITY POLICIES

The following are City policies that affect bicycle facility implementation. Their inclusion within Chapter 2 - Bicycle Network demonstrates the impact that these policies could have on expanding and refining the Bicycle Route Network

REVIEW MULTI-LANE STREETS FOR NETWORK INCLUSION

Action 2.7 Review multi-lane streets with excess capacity, such as those with less than 600 vehicles per lane per peak-hour, for possible lane removal to accommodate bicycle lanes or other bicycle-friendly treatments.

DPT currently reviews multi-lane streets for Bicycle Route Network inclusion and possible bicycle lane striping. For example, Alemany Boulevard (Brotherhood Way to the Mission Street overpass) had enough excess capacity to allow bike lanes to be striped. The genesis for review of a multi-lane street can occur from a variety of sources: DPW's planned street resurfacing, recommendations from advocacy groups, or internal DPT project review and design. Additionally, as advances in Intelligent Transportation System (ITS) technology continue, it should be employed to improve the effectiveness of existing multi-lane streets, thereby possibly allowing the addition of bicycle facilities, where appropriate.

However, it should be noted that extra capacity on arterial streets allows for the management of traffic volume fluctuations. This is particularly relevant when there are parallel residential streets, bicycle routes, or transit routes. Diversions or restrictions that force traffic volumes onto residential street, bicycle routes, or transit routes should be avoided.

RECOMMENDED AMENDMENTS TO LOS STANDARDS AND METHODOLOGIES

Action 2.8 Adopt the San Francisco County Transportation Authority (SFCTA) technical working group's recommended revisions to San Francisco's level of service (LOS) standards and methodologies such that they better respond to the multimodal nature of San Francisco's transportation system, specifically addressing bicycles.

LOS measures are used to predict impacts of proposed projects on the transportation system. Existing LOS standards and methodologies used by the City are focused primarily on automobile travel, secondarily on transit travel, and very little on bicycle and pedestrian travel.

The SFCTA adopted a Strategic Analysis Report (SAR 02-3) "Transportation Level of Service (LOS) Methodologies" in December 2003. This report concludes that conventional LOS measures, and the current process for evaluating transportation projects, are not consistent with the City's General Plan policy guidance toward development of a balanced, multi-modal transportation system. Specifically, they conflict with General Plan Policy 10.1, which calls for

the City's transportation system to be assessed in terms of the movement of people and goods rather than vehicles. Furthermore, the City's LOS measures do not incorporate factors most important to bicyclists and provide limited acknowledgement of the environmental benefits of bicycling.

A LOS TWG, recommended in SAR 02-3, began meeting in June 2004⁹. It consists of representatives from the SFCTA, DPT, Muni, the Planning Department, Caltrans, the Association of Bay Area Governments (ABAG), a transportation consultant, an academic researcher, bicycle and pedestrian advocates, and a California Environmental Quality Act (CEQA) expert from the City Attorney's Office. When the LOS TWG completes its work, it will present its recommended revisions to current City LOS standards and methodologies (a refined version of SAR 02-3's recommendations) to the SFCTA Board for approval and action. The LOS TWG should make recommendations for amending existing LOS methods to better reflect the multimodal nature of travel in San Francisco. Their work will be done in two phases, with recommendations at six and twelve months. To implement any new recommended methodologies, the Planning Commission would have to adopt these new methodologies in its revised Guidelines for Environmental Review.

Streamlining the environmental review process would reduce the time needed for bicycle project delivery and would help reduce bicycle project costs as well.

TRAFFIC CALMING AND THE BICYCLE NETWORK

Action 2.9 Define and identify "bicycle arterial streets," conduct public outreach, and seek a Municipal Transportation Agency (MTA) policy decision to modify the Traffic Calming Guidelines.

In 1998, the SFCTA led a citywide effort to establish Traffic Calming Guidelines. In February 2001, a new section in DPT's Traffic Engineering Division, the Livable Streets - Traffic Calming Program, was created to implement these Guidelines.

The 1997 San Francisco Bicycle Plan included specific recommendations for bicycle related traffic calming measures to be implemented by DPT's Bicycle Program. However, since the creation of the DPT's Traffic Calming Program, all traffic calming projects have been managed by the DPT's Traffic Calming Program, with the DPT Bicycle Program serving in an advisory role. Traffic Calming projects must follow the approved Traffic Calming Guidelines.

The Traffic Calming Guidelines define applicable traffic calming measures and the procedure for their possible implementation. The Guidelines specify that certain measures can only be deemed acceptable after the design details have been field-tested and approved by the necessary stakeholders.

⁹ Information regarding the SFCTA's LOS TWG can be found at <http://www.sfcta.org/SARs.htm>.

The current San Francisco Traffic Calming Program employs a three-track approach to calming City streets. They range in their aggressiveness and goals.

The **Arterial Track** seeks to make arterial and commercial streets more pedestrian-friendly and improve intersection safety, but does not employ vertical deflection devices such as speed humps and cushions or raised intersections. The Arterial Track streets are treated in a corridor approach, rather than with site specific measures.

The **Local Streets Track** includes both area-wide and site-specific approaches, depending on the particular location, safety issues, and traffic. The Local Streets Track employs additional measures to reduce the negative effects of motor vehicle traffic on these local streets including vertical deflection measures.

The **School Area Track** is the most comprehensive tackling streets where the largest numbers of children walk to and from school. Traffic calming of school areas takes both an area-wide and a site-specific approach. Since children are some of the most vulnerable pedestrians, this track takes a more aggressive approach to creating self-enforcing streets in school areas.

Table 2-5
Traffic Calming Measures with Specific Applications

Street Type	Street Trees	Pavement and Crosswalk Treatments	Rumble Strips	Speed Humps	Longer Speed Humps / Speed Tables / Raised Crosswalks	Curb Bulbs	Chicanes	Median Islands	Traffic Circles	Street Narrowing / Sidewalk Widening	Angled Parking	Diversers / Forced Turns and Street Closure
Arterial	✓	*	*1	X	*	✓	X	✓	*2	✓	*	X
Commercial	✓	*	X	*	*	✓	✓	✓	✓	✓	*	X
Local & School	✓	*	X	*	*	✓	✓	✓	✓	✓	*	*3

✓ - acceptable; X - not acceptable; * - design details/field testing will determine acceptability

¹ Rumble strips may be acceptable at the end of freeway exits or on certain arterial streets that are not residential or commercial.

² Modern roundabouts may be appropriate in limited cases on certain arterials, but not in the first stages of the program.

³ May be appropriate as a last resort on certain local streets that experience cut-through traffic.

Note: Stop signs are not advisable as a traffic calming measure unless otherwise warranted.

The Traffic Calming Guidelines were established through a comprehensive citywide effort with input from many community groups including the SFBC and BAC. These guidelines were adopted by the MTA Board and any changes to these Guidelines would require additional public outreach and MTA Board approval. The first step in this process would be to define “bicycle arterial streets” and then identify which bicycle routes meet this definition. The 1997 Bicycle Plan’s “bicycle priority streets” is a good starting point. However, since this Plan predated the formation of DPT’s Livable Streets - Traffic Calming Program and the Traffic Calming Guidelines, the selection of these “bicycle priority streets” needs to be reconsidered in terms of a new definition of “bicycle arterial streets.” The “bicycle priority streets” definition should take San Francisco’s Transit First Policy into account and be incorporated into the City’s General Plan.

SUPPLEMENTAL DESIGN GUIDELINES

Action 2.10 Implement Supplemental Design Guidelines on specific Recommended Network Improvement projects with the appropriate level of analysis and study.

The Supplemental Design Guidelines were developed as a part of this Plan by the DPT Bicycle Program staff and the Alta Consultant Team. They were reviewed by the project Technical Advisory Committee and approved by ISCOTT. The Supplemental Design Guidelines are intended to provide City staff with a more detailed and varied set of tools to apply when improving the Bicycle Route Network.

The Supplemental Design Guidelines complement the San Francisco Bicycle Plan. These design concepts are intended to supplement the design guidelines for typical bikeway situations provided in Caltrans Highway Design Manual (HDM) Chapter 1000, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, and the Federal Manual of Uniform Traffic Control Devices (MUTCD) 2003, Part 9 Traffic Controls for Bicycle Facilities. These treatments draw upon creative solutions in use in other locations in California, other states, and European cities.

These designs are conceptual, and when applied to specific situations, their application must be reviewed further on a case-by-case basis. It should be noted that for several of the designs, more than one option is presented. In these cases, ultimately one preferred design should be selected. Strong design guidelines will allow the City of San Francisco to improve the quality of the Bicycle Route Network by applying the highest standard of bicycle safety, comfort, and convenience.

Caltrans HDM Chapter 1000, AASHTO Guide for the Development of Bicycle Facilities, and the MUTCD should be the primary reference and the use of the Supplemental Design Guidelines should be supplemental - as its name implies.

The Supplemental Design Guidelines are included as Appendix A and can be found on DPT's web site at: www.bicycle.sfgov.org.

SHARED LANE PAVEMENT MARKING

Action 2.11 Prioritize phased application of the Shared-Use Pavement Arrow on appropriate existing signed bicycle routes, wide curb lanes, and newly designated routes where bicycle lane implementation is demonstrated to be infeasible.

One Supplemental Design Guidelines of particular note is the Shared Lane Pavement Marking (Sharrow). Until recently, there was no approved pavement marking for Class III bikeways (signed bicycle routes without bicycle-specific pavement markings, where cyclists and motorists shared the same, often narrow, lanes). As a result of an experiment approved by the CTCDC, there is now a marking for shared lanes on Class III bikeways (approved by the CTCDC August 12, 2004), which is included in the Supplemental Design Guidelines.

As Class III bikeways constitute the bulk of San Francisco's Bicycle Route Network, the potential application and benefit of Sharrows is significant. From the study referenced above, installation of the bicycle-and-chevron design Sharrow demonstrated that:

- cyclists rode further away from the door zone;
- motorists shifted to the left and gave more room when passing cyclists;
- fewer cyclists rode on the sidewalk; and
- fewer cyclists rode the wrong way on the street.

While the Sharrows were studied in mid-block locations, they may also be effective in other situations, such as intersection approaches with multiple turn lanes where a through cyclist should be in the middle of an optional through/turn lane. Further study of the Sharrow in these types of situations, along with development of warrants to determine which Class III bikeways will have Sharrows installed, should be undertaken by the DPT.

The report "San Francisco's Shared Lane Pavement Markings: Improving Bicycle Safety" describes the experiment and can be found in Appendix B. Any further study and implementation of this pavement marking should be coupled with an education campaign when installation occurs.

BICYCLE FACILITY IMPLEMENTATION STEPS

A. PROJECT IMPETUS

A project can originate from several different sources:

- Noted by staff as a necessary safety improvement;
- Recommended by the Bicycle Plan;
- Requested by the public or advocacy group;
- Requested by an elected official; and
- Opportunity presented by another project or another agency.

B. BICYCLE PROGRAM STAFF ANALYSIS

Once a project is initiated, typical questions and data collection by Bicycle Program staff include:

Design

What is the current condition of the facility and what is being proposed?

Data: drawings and descriptions of current and proposed conditions

Problem/Solution

What is the problem and how does this project solve it?

Data: bicycle counts, collision history, prevailing motor vehicle speeds, knowledge of route and existing bicycle facilities in the project area, and consideration of alternative solutions or routes

History/Background

What is the history of transportation related requests in the area?

Data: knowledge of correspondence related to the project (requests for bicycle facilities, traffic calming, tow-away changes, etc.) and existing plans for the area

Traffic Capacity

Has capacity changed in any way?

Data: recent traffic volumes

Can significant LOS/travel time degradations be mitigated?

Data: proposed traffic signal changes, tow-away lanes, turn restrictions, and motor vehicle lane changes

What effect will changes have on neighboring streets?

Data: knowledge of area and potential cut-through traffic routes

Transit

Is this project on a transit route?

Data: what route(s), what transit headway, use by "dead head" routes (transit vehicles not carrying passengers, usually operating to/from transit yards), and location of any tracks

How will it affect transit?

Data: travel time and delay studies, width of lanes used by transit vehicles, location of and effect on transit stops or zones, and accommodation of transit turns

Parking

Are there any parking changes?

Data: existing vs. proposed parking, number of parking spaces gained/lost, and changes in colored curb zones

What is the current parking occupancy for various times of day?

Data: parking survey

What is the public response to parking changes?

Trucks

Is the project on a truck route?

Data: approximate frequency of truck use, width of lanes used by trucks, and accommodation of truck turns

Pedestrian Concerns

Will this project improve or degrade pedestrian access or safety?

Data: traffic speed data (if the project may have a traffic calming effect) and planned pedestrian or DPT Livable Streets projects

Land Use

How will this project fit in with existing land use?

Data: knowledge of land use and location of heavily used driveways or loading docks

Other Departments or Agencies

Does this project require outreach to other City departments or non-City agencies?

Data: evidence of outreach and departments' and/or agencies' recommendations

Will the street be repaved in near future?

Data: Check DPW paving schedule and modify schedule for bike lane striping as appropriate.

C. ADDITIONAL REVIEW AND ENVIRONMENTAL ANALYSIS

Upon completion of data collection and initial project design, the DPT Bicycle Program reviews the project with other City departments, external agencies, advocacy groups, and internally within DPT to determine if there are any additional data needs or concerns. This review includes conformity to CEQA, the San Francisco General Plan, the Bicycle Plan, and other relevant planning documents.

Depending on the level of environmental impact, either a categorical exemption or a negative declaration is sought by the DPT from the Planning Department. Typically, projects with impacts that include an immitigable change of LOS to E or F would require a full Environmental Impact Report (EIR). Historically, the DPT Bicycle Program has attempted to mitigate the impacts, in the steps above, so that a project would not require a full EIR. Whenever possible, solutions are recommended that require no significant negative impacts on the circulation of other vehicles or pedestrians. In some cases, it is not possible to improve conditions for bicyclists without having some impacts on other modes.

D. LEGISLATIVE PROCESS

The CVC delegates authority for certain traffic changes to local jurisdictions, provided that approval of the governing body (BOS for San Francisco) is obtained. If a proposed bicycle project includes any of these traffic changes, the DPT Bicycle Program drafts the necessary

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legislation. The legislative process involves the following steps that occur in the order below, unless otherwise specified.

DPT Staff Meeting

The project is discussed at a bimonthly DPT Traffic Engineering staff meeting. Projects may need modification and discussion at more than one meeting.

ISCOTT Meeting

ISCOTT (chaired by a DPT Traffic Engineering staff member and consisting of representatives of DPT, DPW, Police, Fire, Public Health, Muni, City Planning, and other City departments) reviews projects as described below. The intent of ISCOTT is that its members represent and express their department's position and interests on agenda items. Projects may need modification and discussion at more than one meeting.

ISCOTT considers proposed projects when they are in their final design phase and from an important perspective. ISCOTT reviews projects for functional compatibility to make sure that their final design does not interfere with other current and projected transportation uses, especially the delivery of essential services (ie.: Police, Fire, Muni, etc.). Design details such as precise lane widths and curb heights, exact signage placement, and compatibility with emergency response plans are reviewed by ISCOTT. Since final design project details will not be determined by the end of the Bicycle Plan Update process, ISCOTT review is impossible at this time. Therefore, all projects in this Plan will need to be submitted for ISCOTT review when they are sufficiently developed. This ISCOTT review is necessary in addition to review by the Bicycle Plan Update Technical Advisory Committee (that represents many, but not all, of the departments represented by ISCOTT). The Bicycle Plan Update process, with interdepartmental cooperation, will greatly reduce the chance that unforeseen issues arise at ISCOTT.

Bicycle Advisory Committee (BAC) Meeting

Prior to the BOS Committee (see below), the BAC should pass a resolution recommending BOS' action on a potential bicycle project. Public comment can be heard at this meeting.

DPT Public Hearing

Prior to this hearing, public notices are posted in the project area and distributed to interested parties. A DPT staff Hearing Officer presides and records public concerns and questions received prior to and at the meeting. Some projects are returned to Traffic Engineering staff for possible modification to address concerns raised at the hearing.

MTA Board Meeting

Additional public comment is heard at this meeting. If the MTA Board does not approve the item, it is sent back to DPT staff for possible modification.

BOS Committee Meeting

Prior to a BOS Hearing, public notices are posted in the project area and distributed to interested parties. Before an item can be heard by the appropriate Board Committee, environmental clearance must be obtained. If the Committee does not approve the item, it is sent back to DPT staff for possible modification.

BOS Meeting

Public testimony is not permitted at BOS Meetings for items referred by a BOS Committee (since public testimony was already heard at the Committee meeting). If the BOS does not

approve the item (an unusual circumstance, if the Committee approved it), it is sent back to DPT staff for possible modification.

Mayors' Approval

If the Mayor does not approve the item (an unusual circumstance), it is sent back to DPT staff for possible modification.

NOTE:

Trial projects are required to go through this entire process twice: (1) to approve the trial and (2) to approve the permanent facility.

E. IMPLEMENTATION

After the legislative process completion, the project can be implemented. For projects requiring new striping, pavement quality is a major consideration. Generally, new pavement striping would occur after a roadway-resurfacing project. Resurfacing projects are scheduled by DPW using its Pavement Management and Mapping System (PMMS).

F. FUNDING

The above process generally occurs after grant funding has been secured. The MTA Board, BOS Committee, full BOS, Mayor, and Controller must approve a resolution to apply for, accept, and expend funds for all grants, with the exceptions below. This Plan's Funding Section provides more information on funding opportunities and approvals.

Funds for projects from the SFCTA half-cent sales tax (Prop. B and Prop. K) do not require MTA Board approval per current policy of the MTA Executive Director. Sales Tax Project funding approved by a formal SFCTA resolution does not need BOS approval, since the SFCTA and the BOS are comprised of the same members. However, grant funds from other sources require both MTA Board and BOS approval.

MAINTENANCE STANDARDS FOR THE BICYCLE NETWORK

Among other responsibilities, DPW is in charge of cleaning, repairing, and maintaining city streets and sewers; building and maintaining plazas, stairways, and other public areas; coordinating street excavation work; looking after the City urban forest; enforcing litter laws; removing graffiti and illegal signs; regulating street and sidewalk use; and enhancing and protecting the public right-of-way.

The City's streets can be made safer through improved maintenance standards specifically targeting bicyclists' needs. Through its street and sewer inspection program and response to citizens' reports, DPW has developed a standard of street maintenance that primarily responds to the needs of automobiles. Whereas a damaged road surface may seem merely a nuisance to auto users, the same condition can be far more critical for cyclists.

The recommendations in this section do not create new specifications, but are recommended changes to existing DPW and DPT specifications, regulations, and policies. This Plan is not

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recommending a separate set of documents for bicycle facilities in the public right of way. Whatever changes or refinements are made should be incorporated in the appropriate sections of the City's existing standard specifications, DPT's "Regulations for Working in San Francisco Streets¹⁰," and DPW's "Regulations for Excavating and Restoring Streets in San Francisco."

DPT, DPW, the BAC, and the SFBC should continue to communicate to be sure that all telephone, Internet, print, and any other public outreach material regarding street surface issues are current and consistent. Signage with DPW's relevant telephone numbers should also be explored along bike paths or lanes prone to debris build up. It is more efficient for cyclists to contact DPW directly, without first going through DPT, if they want to report street surface related problems. The relevant DPW contacts are:

Pothole filling	695-2100 or potholes@sfgov.org
Problems with street construction/excavation sites	554-SCCC (7222)
General DPW contact - Street and Environmental Services	28-CLEAN (282-5326 or 28clean@sfgov.org)

EXISTING POLICIES

Many DPW policies of interest to cyclists are addressed in the 1999 revision of DPW's "Regulations for Excavating and Restoring Streets in San Francisco," adopted following approval of the 1997 Bicycle Plan. These include:

Section 9.1.D Excavation in concrete pavement and parking strips . . . which carry . . . bicycle lanes shall require removal of concrete to an existing joint. Excavation and restoration in these areas shall not result in any new joints in the concrete.

Section 12.4.A ACWS (asphalt concrete wearing surface) on designated bicycle routes must be removed and restored for the full width of the bicycle lane.

Section 6.3.A.3 For major projects (lasting 15 calendar days or longer), notices must be mailed (at least 30 but not more than 60 calendar days before start of work) to the SFBC and the SFBAC when excavations occur on designated bicycle routes.

DPT's "Regulations for Working in San Francisco Streets¹¹" (commonly referred to as the "Blue Book" because of its blue cover) that is referenced in the "Regulations for Excavating and Restoring Streets in San Francisco," contains a map of all San Francisco bicycle routes and establishes rules so that work can be done both safely and with the least possible interference with pedestrians, bicycle, transit and vehicular traffic.

¹⁰ http://www.sfgov.org/site/dpt_index.asp?id=13471#BB7

INTERDEPARTMENTAL MAINTENANCE COORDINATION

Representatives from DPW, DPT, the Department of Recreation and Park, and the Bicycle Program Manager should improve interdepartmental coordination regarding maintenance issues on San Francisco's streets and paths, especially on designated bikeways. This will result in ongoing maintenance or street cleaning issues having a better chance of being aired, prioritized, and monitored for implementation. The Bicycle Program Manager should be alerted and updated to potential changes in transportation patterns that affect the City's commuter and recreational bicycle riding community.

EVALUATE THE "SPOT" IMPROVEMENT PROGRAM

In 1993, a "Spot" bicycle improvement program was initiated to identify and implement various bicycle-related improvements. Suggested small scale bicycling improvements were largely identified through postage-paid mail-in postcards which were distributed through bicycle organizations and bicycle shops in the City. This program was handled by the DPT Bicycle Program and any needed repair work is accomplished by DPT or DPW, with DPT as the lead department.

This method of soliciting cyclists' input has been replaced by reliance on the DPT Bicycle Program website (www.bicycle.sfgov.org) and telephone hotline (415 585-BIKE). If the Spot Improvement postcards are reinstated, they will need to be updated. Additional information, such as the E-mail address and phone number for DPW pothole filling should be included, so DPW can be contacted directly, without first going through DPT. This should also be done for other agencies where it would be more efficient for them to be contacted directly by cyclists. The Bicycle Program should evaluate the effectiveness of the current website and telephone hotline system of soliciting cyclists' input and determining if it is necessary to update and reinstate the Spot Improvement postcards.

STANDARDS FOR CONTRACT WORK

Action 2.12 Develop and enforce a set of standards that must be strictly adhered to by contractors for street excavation restoration, including a guarantee of one year for replacement of any defective work.

An important step and requirement, towards improving the current road maintenance done for the City through contract work is to develop a set of standards that must be strictly adhered to and enforced by DPW with a guarantee of a minimum of one year for replacement of any defective work. A pre-qualification of acceptable contractors who do City work would go a long ways to ensuring quality, acceptable work.

ACCEPTED STREETS

Action 2.13 Amend DPW's guidelines to allow acceptance of a City street due to its inclusion on the Bicycle Route Network, subject to Board of Supervisor approval.

An unaccepted street is one that is not accepted for maintenance at public expense. Current DPW policy¹² is to perform major maintenance only on streets that the BOS has named by ordinance - accepting each specific block for maintenance at public expense. DPW makes exceptions to the acceptance guidelines for streets used as primary thoroughfares, streets used by Muni, streets giving access to public facilities, and streets that would enhance traffic and emergency vehicle movements if accepted. The presence of a bicycle route should be added to the list of reasons to accept streets even though they may be deficient in some physical features. Although proposed in the 1997 Plan, this policy change has not yet been pursued. Amending DPW's guidelines to allow acceptance of a City street due to its inclusion within the current Bicycle Route Network, would assist potential improvements along Bicycle Route 36, (Townsend Street). It is unclear whether bicycle lanes can legally be striped on unaccepted streets. The City currently sweeps and has established parking controls on some streets that are not resurfaced because they are technically unaccepted. Additionally, a dedicated public right of way is public property whether or not the City maintains it and the City can be held liable for personal injuries and other claims arising from the physical condition of its surface, especially when the existence of improvements invites public use. On the other hand, Article Nine of the Public Works Code holds the owners of lots fronting on unaccepted streets responsible for the streets' maintenance (to its centerline). If the City improves unaccepted streets, this would be a "gift" of public funds and would require Board of Supervisor' approval. The only official way the Board can do this is to accept the street for City maintenance.

PATHWAY MAINTENANCE

Action 2.14

Create a prioritized citywide bicycle pathway inventory that would include: surface condition; signing and lighting status; required maintenance or improvements needed; and the agency responsible for each path.

DPW, the Recreation and Park Department, and DPT should develop a Bicycle Pathway and/or Pavement Maintenance (Renovation) System. This system would be maintained by one of the above mentioned departments and would incorporate a computer database which could provide reports on the current condition of every bicycle lane and pathway in the City and which City department is responsible for each facility. This database should be kept updated through regular surface condition surveys and would provide a prioritized maintenance list for all City pathways.

In addition, this database should provide signing/lighting needs and maintenance information. When maintenance is scheduled, the responsible department should provide advanced warning of maintenance work and a traffic routing plan or detour route should be established and signed.

¹² Unaccepted Streets Surveyed for Acceptance, Executive Summary, Civil Engineering Division SFDPW, November 19, 1994.

STREET CLEANING

Action 2.15

Maintain a minimum of a weekly sweeping schedule (DPW and the Recreation and Park Department) - especially for off-street paths that are not currently cleaned on a regular schedule - in addition to sweeping bikeways whenever there is an accumulation of debris such as gravel, glass, and sand.

Broken glass, gravel, and debris along roadsides and on paths pose a problem for bicyclists and can cause punctured tires. Streets in San Francisco are cleaned on a regular schedule by DPW except for streets, trails, and paths in parks (maintained by the Recreation and Park Department). DPW owns several small mechanical sweepers ("Green Machines"), sized to sweep paths, in addition to its street-sized mechanical street sweepers. However, several off-street paths are not currently cleaned on a regular schedule, resulting in debris buildup. This is made worse in areas where people set up camps and leave refuse behind.

When the DPT Bicycle Program notices or is notified of debris on a bikeway, they notify DPW, which then sweeps that bikeway. When the Bicycle Program is aware of an ongoing debris problem on a bikeway (such as the Duboce Avenue Bikeway or the Laguna Honda Boulevard bicycle lanes), they work with DPW to initiate a more frequent sweeping schedule, if possible. As the need for more frequent cleaning of off-street bicycle facilities is brought to DPT's attention (such as the new Cesar Chavez Street Bicycle Bridge and the pathway on south side of Cesar Chavez Street under US 101), DPT will continue to work with DPW to initiate a more frequent sweeping schedule, if possible.

PAVEMENT

Potholes are repaired by filling with asphalt to the level of the surrounding surface. The asphalt is compacted to prevent future settlement and is then inspected for quality compliance. DPW repairs potholes that are their responsibility (including City parks) within 48 hours during week days. If the repair is the responsibility of another agency, DPW will notify that agency. More details on repair of potholes, depressions, bumps, and other defects on city streets can be found on the DPW website (<http://www.sfgov.org/sfdpw/pothole.htm>).

Existing street composition varies in the City depending on when the street was built. Typically, City streets have an 8-inch concrete base overlaid with 2 to 4 inches of asphalt. Approximately 60 percent of the City's streets have a concrete base. Resurfacing is usually done in the dry season (March 15 to November 15). Crack sealing and pothole patching is done all year.

STREET CUTS

Open street cuts are generally marked with barriers, or covered with two inches of black top asphalt or metal plates. After work is complete, all filled and repaved street cuts should be flush with the adjacent surface. When a street is resurfaced with an asphalt overlay, the existing asphalt in the area adjacent to the gutter lip should be ground to the depth of the asphalt concrete to be placed on the street. Temporary asphalt ramps should be installed at all wedge cuts located at intersections, and pedestrian and bicycle crossings to provide a transition at the

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vertical differential. When the asphalt concrete is finally placed on the street, the level of the asphalt should match the level of the gutter within a 1/4-inch to eliminate the edge.

DPW's Street Construction Coordination Center (SCCC) oversees street excavation and issues excavation permits. They use the bicycle network electronic map layer to determine which excavation permits involve Bicycle Route Network streets. Locations of current street excavations can be found by street on DPW's website (www.sfdpw.org) by clicking on "Street Construction Coordination Center" and then "Current Excavation Permits."

SCCC is also the City's central clearinghouse that should be contacted about problems with any type of street construction or excavation (554-SCCC (7222)). Note that the City, utility companies, or the approximately twelve private contractors that excavate in the City's streets have 72 hours from the time the excavation-related construction is finished to complete the excavation, then 72 hours to backfill and compact a trench. They then have 72 hours from the time the excavation is backfilled to replace the pavement base. They have 72 hours after pavement base replacement to restore the finished pavement. DPW has four inspectors assigned to monitor street excavations and five district inspectors to respond to non-construction issues, such as pothole reports. DPW's goal is to inspect all large excavation projects of more than 1,000 square feet of street surface two to three times twice a week, although this may not be the current practice.

STEEL PLATES

Utilities and private companies that install utility trenches on streets place steel plates over them. If care is not taken to provide a smooth transition between the plate and the street surface, an abrupt change of road surface will occur.

Steel plates used to cover work in progress may shift position under the movement of heavy trucks and buses, leaving gaps. Being an inch or so thick, the plates themselves have sharp, square edges that lie above the street level. DPW and DPT require that steel plates have beveled edges and non-skid surfaces. The plates must be wedged with wooden wedges to keep them in place, their edges ramped with asphalt (which must be replaced and renewed frequently) to provide a transition to the adjacent roadway, and must be tacked spot welded together if more than one plate is used. The surface of non-skid plates can become worn out and smooth with wear. If worn non-skid plates are used, they are no longer compliant with the City's requirement for non-skid plates.

PATCHING AND PAVING

Action 2.16	Increase the profile of the Bicycle Route Network within DPW's street resurfacing and paving prioritization process.
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- San Francisco should adopt stricter paving, compaction, and smoothness standards similar to those of Palo Alto.¹³
- DPW should give bicycle routes higher priority than other streets when developing paving projects.
- DPW should require contractors to guarantee their work for a minimum of one year. (NOTE: Article 2.4 Section 2.4.70 of the Public Works Code obligates the owner of the facility causing an excavation to be made in the public right-of-way (ROW) to be responsible to maintain, repair or reconstruct the site of the excavation until the public ROW is reconstructed, repaved or resurfaced.)
- It is recommended DPW improve enforcement of their standards, published in “Regulations for Excavating and Restoring Streets in San Francisco,” to ensure that non-compliant contractors are cited for every violation.

DPW uses a Pavement Management and Mapping System (PMMS) to prioritize street paving based upon a point system. The PMMS uses a numeric “Pavement Condition Score” based on a field inspection of three surface features: cracking, raveling (erosion) and motor vehicle ride quality. This score assesses each block’s maintenance need, identifying its just-in-time maintenance time point and its relative priority. The rating system does not replace engineering judgment. The maintenance recommendation is a starting point for the engineering effort. Each block still requires an engineer’s on-site assessment of its exact maintenance needs. (The Pavement Condition Score only applies to the pavement condition and does not account for traffic volume, number of citizen street-surface reports, geographic equity, or whether the street is a bicycle route or a Muni route.) The highest priority for street resurfacing is not always streets in the worst condition. Streets that can have their life prolonged without complete reconstruction receive higher priority so they do not deteriorate to the point where they require complete reconstruction, a more costly option.

Streets cannot be resurfaced until all the required utility clearances are received, to ensure that all planned utility work is complete before they are resurfaced. This may often take several years. If a small section of street is in very poor condition and the entire block is not scheduled for repair in the near future, “patch paving” is done. This involves grinding out and replacing the pavement section. It is important that contractors and utilities be held to strict standards regarding annual re-patching and replacing of defective asphalt patches. Asphalt pavement replacement must be flush with surrounding pavement, including any adjacent concrete gutter. It must be inspected up to one year after installation to check for settling and the contractor should replace resurfaced pavement if found defective.

¹³ Information regarding the City of Palo Alto street maintenance can be found at <http://www.cityofpaloalto.org/streetmaintenance/index.html>, or by contacting the City of Palo Alto, Public Works Department, Engineering Division, 250 Hamilton Avenue, 6th Floor, Palo Alto, CA 94301. The Palo Alto street maintenance standards are currently being updated. The existing standards are included in Appendix G4 of the 1997 San Francisco Bicycle Plan.

Section 8.3 of the 1999 revision of DPW's "Regulations for Excavating and Restoring Streets in San Francisco" specifies that excavation sites shall be swept at the end of each workday. This avoids leaving loose asphalt materials that can adhere to the existing asphalt or concrete surface.

Section 10 (Trench Backfill Requirements) requires that the top three feet of backfill be compacted to a relative compaction of not less than 95% and material below the top three feet to not less than 90%. Although certified compaction tests must be taken every 200 square feet of excavation or as specified by DPW, this Plan recommends adopting even stricter compaction and smoothness standards similar to those published by The City of Palo Alto. For instance, contractors and utilities need to be held to strict standards regarding re-patching and replacing of defective asphalt patches and be required to guarantee their work for a minimum of one year.¹⁴ Note, however, that Article 2.4 Section 2.4.70 of the Public Works Code already obligates the owner of the facility causing an excavation to be made in the public ROW to be responsible to maintain, repair or reconstruct the site of the excavation until the public ROW is reconstructed, repaved or resurfaced. Section 11 details "Pavement Base Requirements" and Section 12 details "Paving Requirements."

UTILITY COVERS AND UNDERGROUND PIPES

All utility covers should be flush with the surrounding pavement. Where underground pipes carry steam (not very common in San Francisco), the asphalt around steam utility covers can deform, causing warped pavement. Maintaining heat resistant concrete pads of at least a three-foot radius from the edge of the cover should stop warping of the asphalt near the edges. If possible, install concrete above submerged steam pipes where applicable, to prevent humping of street surface.

CATCH BASIN GRATES

There are over 68,000 storm sewer catch basins in the City. Many older grates are semi-circular in plan with bars parallel to the direction of travel. Parallel-bar grates have openings that can catch and destroy a bicycle wheel rim. Many bicyclists also swerve to avoid the grates, risking collision with motor vehicles. These grate locations were identified by the Bicycle Program Manager and were replaced by grates with bars perpendicular to the direction of travel to improve safety for cyclists. Sunken catch basin grates should be raised to pavement elevation to improve bicycle safety and enhance smooth riding. This is much more costly, because it requires replacement of the frame that supports the grate.

GUTTERS

Curb and gutter upheavals cause "ponding" in bicycle lanes. A regular inspection of every linear foot of curb and gutter should identify those that are raised, sunken or that have some vertical differential that would cause "ponding," and these should be repaired. Sometimes small asphalt dams are constructed in gutters to divert storm water into catch basins. These should not be constructed and existing ones removed where possible.

¹⁴ DPW's trench restoration standard requires that new pavement extend one foot beyond the trench line, but this "T-trenching" is only required on moratorium blocks (those blocks that have been reconstructed, repaved, or resurfaced by DPW or any other owner or person in the preceding five-year period.)

RAILROAD TRACKS

Action 2.17 Create an inventory of locations along the Bicycle Route Network that intersect or run parallel to railroad tracks. Appropriate measures should be undertaken to mitigate the impacts of the track crossings to bicyclists. Removal of unused tracks along the Bicycle Route Network should also be undertaken.

Railroad tracks that are no longer used can be removed or covered with asphalt pavement. Removal is preferable, as pavement covering buried tracks often deforms around the underlying tracks. However, for tracks that cannot be removed (such as tracks that have been designated “historic”), specially designed fabric can be placed over them before they are covered so that pavement deformation is minimized. DPW is responsible for removing or covering, unless the tracks are located within another jurisdiction, such as the Port of San Francisco or the GGNRA. Any track removal within the jurisdiction of the Port of San Francisco must be approved by the Port Commission.

Although some railroad tracks are considered “historic” or may “contribute to the character of the neighborhood,” they should be removed or covered if that would improve cyclists’ safety. Railroad track removal or covering should be prioritized according to their location and orientation to cyclists’ path of travel. Tracks on street most heavily used by cyclists and those at an oblique angle to cyclists’ path of travel should receive the highest priority for removal or covering.

A table of suggested railroad track removals was included in the 1997 Plan. Table 2-7 updates this table for the locations where tracks have not been removed. The other tracks listed in the 1997 table - 2nd Street (between King and Townsend Streets), 3rd Street (north of 16th Street), 3rd Street (between Tulare Street and Cargo Way), and Mason Street (between North Point and Francisco Street) have since been removed.

Table 2-6
Status of Locations for Proposed Railroad Track Removal

Railroad Track Location	Status as of August 2004
Carroll Avenue between Arellous Walker Drive (Fitch Street) and Ingalls Street	Removed to just east of Ingalls Street. There are three tracks along Carroll Avenue in the remaining area (between Third and Ingalls Streets). One (track # 528) is currently used for train turn-around. A second (track #593) is regularly used for trains to access a refrigeration company. The third (track # 534) is currently unusable.
Evans Avenue between Rankin and Quint Streets	The tracks running diagonally across Evans Avenue between Rankin and Quint Streets are currently used daily.
Townsend Street between 7th and 8th Streets	The track running from the Caltrain rail yard along the south side of Townsend Street from just east of 7th Street to just east of 8th Street is used daily by Caltrain to turn one train around. Therefore, this section of track can not be removed until other alternatives are made available.
Van Ness Avenue north of	The track that curves across the concrete surface of Van Ness Avenue into

2. BICYCLE NETWORK

Railroad Track Location	Status as of August 2004
Beach Street	the Fort Mason Tunnel north of Beach Street has not been removed. However, a portion of the tracks has been covered with asphalt patching. This railroad track is considered historic and cannot be removed. It would have to be covered with a special material, and this material covered with a new street surface. Since this street has a concrete surface, this makes the covering more complex than for an asphalt street.

This list includes all freight railroad tracks, either on the Bicycle Route Network or reported to DPT by the SFBAC and other cyclists.

STRIPING, PAVEMENT LEGENDS AND EDGE LINE MARKINGS

Non-skid surfaces should be employed on all traffic lane lines. DPT currently uses thermoplastic, methyl methacrylate (MMC) and occasionally pavement marking tape for striping.

Glass beads are applied to new thermoplastic and MMC striping as a standard procedure to improve skid resistance and reflectivity. Pavement marking tape is significantly more expensive than thermoplastic and MMC, does not stick well to old surfaces, and is very difficult to remove. The tape is thinner, less slippery, requires less maintenance, and lasts longer. Since MMC is only cost-effective when used on resurfaced or rebuilt roadways, these are the only situations where DPT uses it. Raised pavement markers should not be used to supplement road striping because they present problems for bicyclists¹⁵. Where edge line raised reflectors are needed for motorists, they should be installed on the motorists' side of the line. DPT has a policy of not using raised pavement markers on striping that crosses a cyclist's path of travel (such as lane guidelines through intersections). Given San Francisco's dense urban character, there are few locations where edge lines with raised pavement markers are used.

TRAFFIC CODE AMENDMENTS

This section deals with City policies, ordinances and legislation that relate specifically to the Bicycle Route Network. Among these items, the ones of most immediate and lasting importance to bicyclists deal with the planning, design, and maintenance of roadways.

Careful attention to policies, ordinances and legislation can help improve the function of the citywide street network for bicycling. The policies, while often minor themselves, can present major obstacles to the safe and legal passage of bicyclists throughout the City.

¹⁵ California HDM 1003.2 (2) Raised barriers (e.g., raised traffic bars and asphalt concrete dikes) or raised pavement markers shall not be used to delineate bike lanes.

LEGISLATION

Traffic law in California is regulated by the CVC. Cities and counties may not regulate traffic on their streets, including bicycle traffic, except where they are expressly authorized to do so by the CVC. As part of this state regulation, bicycles are generally required to obey the same rules of the road as motor vehicles. To the extent that San Francisco is allowed to regulate bicycle traffic, it does so through the TC.

This section reviews each of these local regulations, reviews changes enacted since the 1997 Bicycle Plan, and make recommendations for further changes.

SAN FRANCISCO TRAFFIC CODE

To provide clear, useful, and uniform regulation with simple administrative procedures to implement modern policies, portions of the TC should be amended.¹⁶

Recent and Proposed Changes to the Code

- TC Section 110, Protection of Existing Bicycle Facilities. *Added by Ord. 343-98, 11/19/98 (This Code only applies to the streets, lanes and paths on the City's official Bicycle Route Network as defined in the most recent update of the Transportation Element of the San Francisco General Plan. It does not apply to construction zones involving temporary changes to lane widths or lane configurations.)*¹⁷
- TC Section 96.1 should be revoked due its redundancy with TC Section 96, lack of consideration for children under 13, and its inconsistency with other similar facilities.¹⁸ *(Note that there is no comparable prohibition against bicycling in the Stockton Tunnel.)*

Bicycling on Sidewalks

Bicycling on the sidewalk is generally inappropriate, as the California HDM indicates¹⁹. Only under the following special considerations should sidewalk bikeways even be considered:

¹⁶ Several sources offer guidance for this examination, such as the Model Traffic Ordinance (MTO) of the National Committee on Uniform Traffic Laws and Ordinances (NCUTLO) and the model ordinance published by the National Institute of Municipal Law Officers (NIMLO), an association of city and county attorneys. California Senate Concurrent Resolution 47 of 1973 created a Statewide Bicycle Committee – often referred to as the SCR 47 Committee – to review California bicycle law and recommend revisions, many of which were subsequently adopted. This committee's report includes a Model Bicycle Ordinance (MBO) – also called a Uniform Bicycle Ordinance (UBO) – for the guidance of local jurisdictions. This ordinance is patterned after and is intended to supplement the League of California Cities' Uniform Traffic Ordinance.

¹⁷ TC Section 110 Protection of Existing Bicycle Facilities that prohibits the following unless the BOS expressly grants prior approval: The narrowing of right-hand travel lanes with parking, including turn lanes to less than 22 feet or the narrowing of right-hand travel lanes without parking, including turn lanes to less than 14 feet; The narrowing or elimination of any bicycle lanes; The narrowing or removal of bicycle paths, or The addition of traffic lanes, except where such lanes consist of left-turn or right-turn pockets.

¹⁸ TC Sec. 96.1 currently prohibits bicycling on walkways in Broadway Tunnel. A sign posted on the walkway at the tunnel's west entrance states "Bicycle Riding Prohibited, § 96.1 T.C." The language of the ordinance and the apparent intent of the sign are to prohibit bicycling on the walkways in the Broadway Tunnel. Since the sign is visible from the roadway, it leads to confusion. However, bicyclists report being cited for bicycling on the roadway. Since the latter behavior is legal, such enforcement is incorrect. Police officers should be instructed on where the prohibition applies and the regulatory signs should be made clearer.

¹⁹ California Highway Design Manual can be found at: <http://www.dot.ca.gov/hq/opd/hdm/hdmtoch.htm>

2. BICYCLE NETWORK

- (a) To provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances.
- (b) On long, narrow bridges. In such cases, ramps should be installed at the sidewalk approaches. If approach bikeways are two-way, sidewalk facilities should also be two-way.

Ideally the following list would be served by off-street Class I Bikeways. However the listed locations also have unique challenges and meet the above mentioned considerations for sidewalk bikeways.

- The northeast side of O'Shaughnessy Boulevard and Bosworth Street (Portola Drive to Elk Street);
- A short segment of the Third Street sidewalk north of US 101;
- A short segment of the north side of Fulton Street (Park Presidio Boulevard to Funston Avenue);
- A one-block segment on the east side of Bayshore Boulevard (Marin Street to Jerrold Avenue); and,
- Walkway within the north bore of the Broadway Tunnel.

If Class I Bikeways are not feasible in the near term, sidewalk bikeways should be explored at these locations.

In general however, sidewalk bicycling should remain illegal per the TC.²⁰ Enforcement should focus on sidewalk bicyclists, whose speed is greater than that of a pedestrian.

A special case occurs along The Embarcadero. The Embarcadero Promenade is under the jurisdiction of the Port of San Francisco. This wide pathway, adjacent to the roadway, is currently used by cyclists and pedestrians with minimal conflicts. However, bicycles are not specifically permitted on the Promenade. Given the variety and large number of users of the Promenade, it is unlikely that the Port of San Francisco would explicitly permit bicycling on the Promenade, due to potential conflicts and liability issues. Therefore, it is recommended that, while not formalized, the tacit acceptance of bicycle operation along the Promenade is adequate for continued bicyclist use.

²⁰ The CVC allows local jurisdictions to regulate bicycling on sidewalks. TC Sec. 96 makes it unlawful to ride a bicycle on a sidewalk, except at a permanent or temporary driveway or on bikeways established by resolution of the BOS. The TC specifies an exception to this rule: children under 13 riding "sidewalk bicycles" may ride on sidewalks, exercising due care and giving pedestrians the right-of-way, except in front of schools, stores, or buildings used for business purposes – in other words, only in residential areas. TC Sec. 3.15 defines a "sidewalk bicycle" as a bicycle having a wheel diameter of less than 21 inches, including the tire.

3. BICYCLE PARKING

BICYCLE PARKING GOALS AND OBJECTIVES

Goal:

Ensure Plentiful, High-Quality Bicycle Parking to Complement the Bikeway Route Network

Objectives:

- Provide secure short-term and long-term bicycle parking, including support for bike stations and attended bicycle parking facilities at major events and destinations; and
- Provide current and relevant information to cyclists regarding bicycle parking opportunities through a variety of formats.
-

RECOMMENDED BICYCLE PARKING ACTIONS

The Planning Department is the City agency charged with updating and enforcing the Planning Code. Bicycle parking requirements for land development are part of the Planning Code. Therefore, many of the recommendations in this chapter must be implemented by the Planning Department as the lead agency. City staff should prioritize the following actions to implement the recommendations for increased bicycle parking in San Francisco:

Action 3.1

Consolidate Sections 155.1, 155.2, 155.3, and 155.4 of the Planning Code to provide clearer regulation, guidance, and exemptions related to bicycle parking.

Action 3.2

Modify the Planning Department's requirements for bicycle parking so that they are less dependent on automobile parking provisions.

Action 3.3

Amend the Planning Code to increase required bicycle parking for new residential developments and base this requirement on a proportion of dwelling units.

Action 3.4

Ensure that all garage bicycle parking is secure, well monitored, and well advertised at garage entrances and other appropriate locations.

Action 3.5

Increase the Planning Department's monitoring and enforcement of bicycle parking provisions in the Planning Code, especially when issuing building permits.

Action 3.6

Hold meetings as needed between the Department of Parking and Traffic (DPT) Bicycle Program and Planning Department staff to update citywide bicycle-parking compliance status and review bicycle-parking information posted on the Bicycle Program website.

Action 3.7

Conduct DPT's bicycle-parking training for new Planning Department personnel as needed.

Action 3.8

Ensure that all City leases are negotiated to include the required level of bicycle parking by cooperative efforts of the City Real Estate Department and the DPT Bicycle Program.

Action 3.9

Pursue a citywide policy to provide secure bicycle parking at all City buildings in areas to be specified by the individual agencies, subject to safety regulations and available space, by cooperative efforts of the City Real Estate Department and the DPT Bicycle Program.

Action 3.10

Amend the Planning Code to lower the number of automobile parking spaces required in buildings where Class I bicycle parking is provided.

Action 3.11

Amend the Planning Code to require bicycle-parking in each individual building of large, multiple-building developments.

Action 3.12

Amend the Planning Code to allow tenants to bring their bicycles into buildings unless Class I bicycle-parking is provided.

Action 3.13

Prepare additional guidelines for placement and design of bicycle parking within City rights-of-way, with DPT Bicycle Program, Planning Department, and Department of Public Works (DPW) input. Consider curb-side on-street bicycle parking, and "sleeve" ring racks where inverted "U" racks cannot be accommodated.

Action 3.14

Develop and maintain a DPT, City-distributed, bicycle-parking outreach campaign in print, audio-visual, and web-based formats to provide relevant bicycle-parking information such as garage locations and locker availability.

Action 3.15

Work with the San Francisco Police Department (SFPD) to make bicycle theft investigation a higher priority and to create a better system for returning recovered bicycles to their owners.

INTRODUCTION

The Bicycle Program has made great strides toward realizing its vision of secure bicycle parking reasonably close to cyclists' destinations, thereby facilitating more bicycle trips. During the past several years, it installed approximately 1,100 bicycle racks, brought more than 50 garages into compliance with the City's bicycle parking requirements, and established responsive communication channels for public suggestions and requests. The DPT also reaches out to the community regarding bicycle parking via brochures, posters, and advertising campaigns where appropriate.

More work needs to be done because many office buildings, commercial districts, public transit modes, and tourist attractions still lack enough proper bicycle parking. This discourages people from cycling because most bicyclists need reasonable protection against theft, vandalism, and in some cases, such as longer-term storage, protection from weather. Bicycle parking is most effective when it is located close to trip destinations, easy to find, and accessible. If quality bicycle parking facilities are not provided, determined bicyclists lock their bicycles to street signs, parking meters, lampposts, or trees, all of which are undesirable because they are often less secure, might interfere with pedestrian movement, and can create liability issues or damage to street furniture or trees.

The San Francisco Planning Code provides a legal framework for bicycle parking requirements. San Francisco has some of the strongest requirements for employee bicycle parking in the country. Planning Code Section 155.1 provides bicycle parking requirements for City-owned and leased building's employees (city government is the largest employer in San Francisco); Section 155.2 requires bicycle parking in buildings with 10 or more automobile parking spaces; and Section 155.4 requires parking for employees and visitors for new and renovated commercial buildings based on square footage. These requirements need to be combined and refined to facilitate needed improvements.

Figure 3-1 shows the location of publicly available bicycle parking in public and private San Francisco garages based upon the DPT Bicycle Program's database.

This chapter reviews relevant Planning Code Sections, outlines the existing bicycle parking facilities, and makes recommendations for improvements where appropriate.

BICYCLE PARKING POLICY FRAMEWORK

SAN FRANCISCO PLANNING CODE

- Action 3.1** Consolidate Sections 155.1, 155.2, 155.3, and 155.4 of the Planning Code to provide clearer regulation, guidance, and exemptions related to bicycle parking.
- Action 3.2** Modify the Planning Department's requirements for bicycle parking so that they are less dependent on automobile parking provisions.
- Action 3.3** Amend the Planning Code to increase required bicycle parking for new residential developments and base this requirement on a proportion of dwelling units.

3. BICYCLE PARKING

The San Francisco Planning Code governs the provision of bicycle parking for all building types. Detailed requirements are set for:

- garages (both City-owned and privately-owned);
- City-owned and leased buildings; and,
- new and renovated commercial buildings.

Section 155 requires one bicycle parking space for every 20 off-street auto parking spaces and specifies requirements for facility access, facility types, signage, and the number of spaces to be provided per building square footage or per number of employees. Reductions and exemptions may be granted by the City when the provision of bicycle parking facilities would create undue hardship or safety concerns, in which case the landlord may not prohibit bicyclists from storing their bicycles within their office space (Planning Code Section 155.1). The Code also allows for alternative arrangements (such as appropriate off-site parking, or an agreement with a nearby health club to provide access to showers and lockers).

There is currently no specific bicycle parking requirement for residential developments in San Francisco, other than the catch-all requirement that applies to all developments, regardless of primary use, of one bicycle parking space for every twenty auto spaces provided. A lack of dedicated secure bicycle parking is problematic in dense cities such as San Francisco with a high percentage of multi-unit residential buildings. Dwelling units in multi-unit buildings tend to be small, with little available storage space, and residents with bicycles are generally forced to carry bicycles up stairs or take them in elevators and store them in hallways, bedrooms, balconies, or other inconvenient areas designated for other purposes. Recent surveys of San Francisco residents revealed that well over 40% of households citywide own at least one bicycle. Many large developments with several hundred housing units each have been approved recently and will be proposed in the coming years, especially in and around downtown and other central neighborhoods naturally convenient for cycling as transportation. However, under current requirements, there will be a great shortage of convenient residential bicycle storage. Just as convenient and safe storage at workplaces and other destinations are important to encouraging and supporting bicycle usage, so is storage at home.

Most major cities in North America require substantially more secure residential bicycle parking than San Francisco. Vancouver, British Columbia requires 1.25 bicycle spaces per housing unit in all multi-unit buildings. Toronto, Ontario requires 0.75 bicycle spaces per unit in buildings with 10 units or more. Cambridge, Massachusetts and Santa Cruz, California require one bicycle space per unit. Chicago recently updated its downtown zoning to require one bicycle parking space per two auto parking spaces. Portland, Oregon requires one secure bicycle parking space per four housing units. All of these cities prohibit space within dwelling units, balconies, or required open spaces from counting toward bicycle parking. However, they make some allowances for flexible arrangements, such as allowing bicycle parking using wall hooks count as a certain percentage of bicycle parking spaces. Generally, there is a need for consolidation and reorganization of the existing code sections into one organized section of the code to provide building owners and managers with more clear direction and clearer requirements for bicycle parking.

A detailed review of the existing code should be completed by DPT and the Planning Department to address and improve regulation of bicycle parking in:

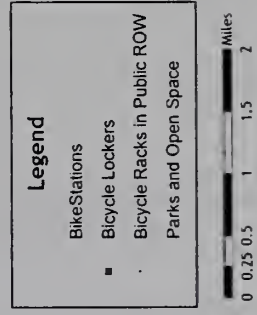
- new buildings;
- existing garages requiring new rules and increased enforcement;
- City schools and local colleges;
- residential developments requiring new ratios based on the number and occupancy of housing units; and,
- City-owned and City-leased buildings requiring increased bicycle parking capacity.

In addition to this review of existing codes, DPT would like to engage the Planning Department to modify its bicycle parking requirements that are currently tied to the provisions for automobile parking.

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Figure 3-1:
Existing Bicycle Parking

Data Source: San Francisco DPT, DPW



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PARKING GARAGES

- Action 3.4** Ensure that all garage bicycle parking is secure, well monitored, and well advertised at garage entrances and other appropriate locations.
- Action 3.5** Increase the Planning Department's monitoring and enforcement of bicycle parking provisions in the Planning Code, especially when issuing building permits.
- Action 3.6** Hold meetings as needed between the Department of Parking and Traffic (DPT) Bicycle Program and Planning Department staff to update citywide bicycle-parking compliance status and review bicycle-parking information posted on the Bicycle Program website.
- Action 3.7** Conduct DPT's bicycle-parking training for new Planning Department personnel as needed.

CITY-OWNED GARAGES

As of early 2004, 17 of the City's 20 garages were in compliance with Planning Code Sec. 155.2 which requires City-owned garages to provide bicycle parking.

Both City-owned and privately-owned garages (but not parking lots) are required to provide either Class I or Class II bicycle parking spaces on the same time basis as that provided to auto parking (i.e., hourly, weekly, etc.). Garages may charge fees and must provide adequate signs or notices near garage entrances to advertise bicycle parking. The quantity of spaces required is based on the number of auto parking spaces provided.

Table 3-1
Required Number of Bicycle Parking Spaces
in Garages

Number of auto parking spaces	Number of bicycle spaces
< 120	6
120-500	1 per every 20 auto spaces
500+	25 + 1 per every 40 auto spaces, up to max. 50 bicycle spaces

PRIVATELY-OWNED GARAGES

The requirements of Section 155.2 also apply to privately-owned garages, but due to poor staffing of bicycle parking enforcement, a Planning Department responsibility per the Planning

Code, many private garages do not provide the required bicycle parking and those that do often lack signage.

The Bicycle Program obtained a TEA-21 grant to perform outreach to private garage owners, inform them of their obligation to provide (and pay for) bicycle parking hardware, and offer technical expertise on installation and preferred locations that offer maximum security.

The San Francisco Garage Bicycle-Parking Compliance Report, found on the Bicycle Program website¹, details DPT research on Code compliance, efforts to educate garage owners, and technical assistance offered to bring them into compliance. We expect that this document will assist the Planning Department to improve their enforcement efforts against non-compliant garages.

CITY-OWNED AND LEASED BUILDINGS

Action 3.8 Ensure that all City leases are negotiated to include the required level of bicycle parking by cooperative efforts of the City Real Estate Department and the DPT Bicycle Program.

Action 3.9 Pursue a citywide policy to provide secure bicycle parking at all City buildings in areas to be specified by the individual agencies, subject to safety regulations and available space, by cooperative efforts of the City Real Estate Department and the DPT Bicycle Program.

The most comprehensive Planning Code requirements apply to City-owned and leased buildings: they are required to provide bicycle parking (Class I and Class II) regardless of the availability of off-street parking.

These requirements also apply to libraries, museums, sports facilities and other City-owned public service buildings with the average peak hour patron load used to determine the number of spaces required. Funding for these requirements comes from donations, grants and programmatic funding and not from General Fund revenues or from private building owners.

PRIVATELY OWNED BUILDINGS

The Planning Code requires bicycle parking in new and renovated commercial (but not residential) buildings. It specifies requirements for bicycle parking, shower facilities, and clothes lockers for both new commercial and industrial buildings and existing buildings undergoing major renovations – whether publicly or privately-owned.

¹

[http://www.bicycle.sfgov.org/site/uploadedfiles/dpt/bike/Bike_Parking/All_Garage_Compliance_Report_07_19_04\(1\).pdf](http://www.bicycle.sfgov.org/site/uploadedfiles/dpt/bike/Bike_Parking/All_Garage_Compliance_Report_07_19_04(1).pdf)

Table 3-2
Required Number of Bicycle Parking Spaces
in City-Owned and Leased Buildings

Number of employees	Class I spaces	Class II spaces
1-20	2	2
21-40	4	2
41-50	4	4
51-100	5%, 5 min.	6
101-300	5%, 5 min.	8, 50% of which are covered
300+	3%, 16 min.	8, 50% of which are covered

New and Significantly Renovated Buildings

Action 3.10 Amend the Planning Code to lower the number of automobile parking spaces required in buildings where Class I bicycle parking is provided.

Concurrent modifications to on-site parking requirements for both private cars and bicycles could yield benefits for property owners, developers, and bicyclists. A more flexible program allowing building owners and developers options for provision of both car and bicycle parking could address perceived inequities and could result in a more efficient building design with a better mix of appropriate parking.

Large Multi-Building Developments

Action 3.11 Amend the Planning Code to require bicycle-parking in each individual building of large, multiple-building developments.

Although rare in San Francisco, large developments that encompass the area equivalent to several City blocks do occur. When this type of development does occur, it is strongly suggested that each building be required to provide bicycle parking, rather than the large development being treated as a whole with consolidated bicycle parking at one site within the complex.

Table 3-3
Required Bicycle Facilities
for New and Renovated Commercial Buildings

Building primary use		Required facilities		
Professional service (sq. ft.)	Restaurants and personal service (sq. ft.)	Bicycle parking spaces	Showers	Clothes Lockers
10,000 – 20,000	25,000 – 50,000	3	1	2
20,000 – 50,000	50,000 – 100,000	6	2	4
50,000 +	100,000 +	12	4	8

Existing Buildings

Action 3.12 Amend the Planning Code to allow tenants to bring their bicycles into buildings unless Class I bicycle-parking is provided.

Building managers are often reluctant to grant access to bicycles due to the perceived negative opinion of other tenants, perceived maintenance costs from bicycle dirt and grease, and fire safety regulations. Experience has shown that these concerns are greatly diminished if bicycle access to a building is made a condition of signing a lease.

OTHER ON-SITE BICYCLE SUPPORT FACILITIES

Workplace Showers

Workplace showers, especially when combined with bicycle parking, encourage bicycle commuting and benefit other employees who exercise during the workday. Some employers, such as hospitals, have showers and others give health club memberships to their employees or install their own fitness centers with showers. However, showers are not available at most workplaces.

Ordinance 343-98 added Planning Code Section 155.3, "Shower Facilities and Lockers Required in New Commercial and Industrial Buildings Undergoing Major Renovation," requiring shower installation based upon building use and gross floor area. [See Table 3-4]

Table 3-4.
Showers Required in New Buildings

Use	Gross Floor Area of New Construction	Number of Showers Required
Medical, professional, general business offices, financial services, business and trade schools and general business services.	0-9,999 sq. ft.	No requirement
	10,000-19,999 sq. ft.	1
	20,000-49,999 sq. ft.	2
	50,000 sq. ft. and up	4
Retail, personal, eating, and drinking services.	0-24,999 sq. ft.	No requirement
	25,000-49,999 sq. ft.	1
	50,000-99,999 sq. ft.	2
	100,000 sq. ft. and up	4

REVIEW OF BICYCLE PARKING CLASSES

The following section reviews classes of bicycle parking, the predominant bicycle parking types, and recommends areas of improvement related to administration and facilities management of each parking type.

CLASS I BICYCLE PARKING

Class I bicycle parking is intended to provide secure long-term bicycle storage. Class I facilities protect the entire bicycle, its components and accessories against theft and against inclement weather, including wind-driven rain. Examples include lockers, check-in facilities, monitored parking, restricted access parking, and personal storage.

Class I parking facilities are more expensive to provide than Class II (defined below) facilities, but are also significantly more secure. Although many bicycle commuters would be willing to pay a nominal fee to guarantee the safety of their bicycle, Class I bicycle parking should be free wherever automobile parking is free. Lockers are useful at locations where regular bicycle commuters need secure long-term parking, such as at major employment sites or transit stations. Due to problems with vandalism and/or non-bicycle use of lockers, monthly rental lockers are preferred to coin-operated lockers.

San Francisco's bicycle lockers are approximately 65 percent occupied. DPT Staff is currently advertising available spaces through an Internet list server posting and on our website. Existing renters tend to renew their leases year after year. The lockers have generally been trouble-free, except for an occasional problem with the old keys and tumblers.

CLASS II BICYCLE PARKING

Class II bicycle parking facilities provide short-term bicycle parking and include bicycle racks that permit the locking of the bicycle frame and one wheel to the rack and support the bicycle in a stable position without damage to wheels, frame or components.

As of early 2004, the Bicycle Program installed more than 1,100 bicycle racks, with 430 racks installed during 2003 alone. Many of the rack locations are generated by public requests, most often by business owners and managers, in part due to a very successful ad campaign aimed at generating requests that was run on San Francisco Municipal Railway (Muni) buses in 2003. Racks are currently sited based on requests from the public and forecasted usage, although other considerations are being evaluated, such as prioritization where new bicycle lanes are striped and in residential areas.

RACK PLACEMENT

Action 3.13 Prepare additional guidelines for placement and design of bicycle parking within City rights-of-way, with DPT Bicycle Program, Planning Department, and Department of Public Works (DPW) input. Consider curb-side on-street bicycle parking, and “sleeve” ring racks where inverted “U” racks cannot be accommodated.

In 1993 the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) approved The DPT Bicycle Program’s Bicycle Rack Placement Criteria which addressed the physical location of bicycle racks on public sidewalks, and the minimum area required by racks.² One of the main objectives of these guidelines was to address the need of maintaining adequate sidewalk clearance width for pedestrians and to limit impediments within the public right-of-way (ROW).

Table 3-5 provides a framework for these additional guidelines, which should be adopted by ISCOTT and incorporated as an amendment to the Bicycle Plan’s Supplemental Design Guidelines.

Table 3-5
Additional Rack Placement Guidelines

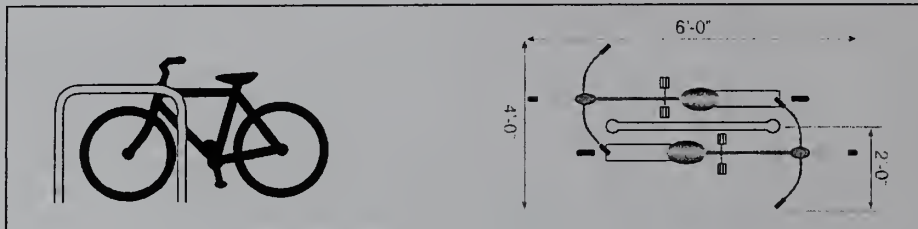
Design Issue	Summary of New Recommended Guideline
Minimum Rack Height	To increase visibility to pedestrians, racks should have a minimum height of 33 inches or be indicated or cordoned off by visible markers. The typical height of racks installed by the DPT Bicycle Program is 36 inches.
Signing	Where bicycle parking areas are not clearly visible to approaching cyclists, signs at least 12 inches by 12 inches should direct them to the facility. The sign should give the name, phone number, and location of the person in charge of the facility, where applicable. Where Class I parking is provided by restricted access, the sign should state that the enclosure must be kept locked at all times.
Lighting	Lighting of not less than one foot-candle illumination at ground level should be provided in all bicycle parking areas.

² http://www.bicycle.sfgov.org/site/uploadedfiles/dpt/bike/Bike_Parking/BIKEPARKINGGuidelines.pdf

Design Issue	Summary of New Recommended Guideline
Frequency of Racks on Streets	In popular retail areas, two or more racks should be installed on each side of each block, up from the current practice of one rack per block side. This does not eliminate the inclusion of requests from the public that do not fall in these areas. Areas officially designated or used as bicycle corridors may warrant the consideration of more racks.
Location and Access	Access to facilities should be convenient; where access is by sidewalk or pathway, curb ramps should be provided where appropriate. Parking facilities intended for employees should be located near the employee entrance, and those for customers or visitors near the main public entrances. (Convenience should be balanced against the need for security if the employee entrance is not in a well-traveled area).
Locations Within Garages	Bicycle parking should be clustered in lots not to exceed 16 spaces each. Large expanses of bicycle parking make it easier for thieves to operate undetected. A clearance of 24 inches between adjacent bicycles and 18 inches from walls or other obstructions should be maintained, except where bulb out bicycle parking is provided
Locations Within Buildings	Provide bicycle racks within 50 feet of the entrance. Where a security guard is present, provide racks behind or within view of a security guard. The location should be outside the normal flow of pedestrian traffic.
Locations Near Muni Stops	To prevent bicyclists from locking bikes to Muni bus pole stops - which can create access problems for transit users, particularly those who are disabled - racks should be placed in close proximity to Muni stops where there is a demand for short-term bicycle parking. The location must conform to ISCOTT guidelines stating that a bicycle rack may be located only within the last five feet of a bus stop and at least five feet from a crosswalk.
Locations Within a Campus-Type Setting	Racks should be located near the entrance to each building. Where racks are clustered in a single location, they should be surrounded by a fence and watched by an attendant. The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to the bicycle parking duties; a cheaper alternative to an attendant may be to site the fenced bicycle compound in a highly visible location on the campus. For the long-term parking needs of employees and students, attendant parking and/or bicycle lockers are recommended.
Locations in Popular Retail Areas	In many popular retail areas, at least one and often two racks exist on each side of the block, an increase from the past practice of locating one rack per sidewalk segment. Areas officially designated or used as bicycle corridors may warrant the consideration of more racks. The current bicycle rack installation program is now adding to this number, either per requests from the public or by the observed need for more racks than are provided. In addition, the City's current bicycle rack installation program should be extended to the private off-street parking lots of existing businesses, including supermarkets, super drugstores, retail stores, shopping malls, and other locations.

INVERTED “U” RACKS

Inverted “U” racks are the current preferred type of Class II bicycle parking in San Francisco. The racks provide two contact points to support a bicycle, are simple to use and install, and require little maintenance. The cost to install each rack, including program staffing as well as the purchase, site survey, and installation of the racks, is approximately \$175.



Inverted “U” Rack

RING RACKS

Ring racks (about \$100 each, with varying installation costs) are an alternative type of Class II bicycle parking. Two basic designs are available: the “sleeve” ring rack, which is mounted as a sleeve on parking meters, and the “bolt-on” ring rack, which is bolted to an existing pole or other structure. Stand-alone racks are also available. Sleeve ring racks require only removal and reinstallation of a parking meter head, while bolt-on ring racks require drilling into an existing post. Stand-alone racks are more expensive to install, as they require anchoring in the sidewalk.

Use of “bolt-on” ring racks is not recommended in San Francisco due to security concerns. “Sleeve” ring racks specially manufactured from square tubing to minimize theft may be viable options for short-term bicycle parking San Francisco. These racks are most appropriately used in commercial areas where parking meters exist and space is too limited to install inverted “U” racks.



Sleeve ring rack



Bolt-on ring rack

“Sleeve” ring racks may be more aesthetically acceptable to merchants than the inverted “U” racks, since they do not substantially change the appearance of the sidewalk space. These racks

can also be used where sidewalk material cannot accommodate an inverted “U” rack (thin, brittle, or non-standard material such as marble sidewalk material).

CURBSIDE STREET BICYCLE PARKING

Where racks cannot be installed on sidewalks (because of narrow sidewalk width, obstructions, etc.), bicycle parking can be installed in the street itself: clustered racks in a car parking space protected by bollards and racks installed on sidewalk bulb-outs.



Clustered racks in a car parking space protected by bollards (Berkeley, CA).



Racks on a sidewalk bulb-out (Boulder, CO).

If the street area to be used for bicycle parking is not all concrete, additional costs may be incurred to widen the concrete area so that the racks can be firmly anchored. Sidewalk bulb-outs can be expensive if substantial drainage and/or utility work is necessary. Sidewalk bulb installation alone can exceed \$30,000, not including bicycle rack costs. However, bulb outs are sometimes installed as streetscape improvements or development activities and bicycle racks may be able to be added.

While on-street bicycle parking may take space away from the automobile parking, this may be mitigated by: creating additional auto parking spaces by consolidating driveways, moving fire hydrants, or adding parking on adjacent streets. Options for combining bicycle and motorcycle parking also exist. Designs for on-street or bulb out bicycle parking should consider drainage, emergency vehicle access to buildings, and maintenance of motorist, pedestrian, and bicyclists' sight lines.

ATTENDED BICYCLE PARKING

Attended parking is practical where there is a heavy demand for secure bicycle parking. College campuses and high schools are obvious locations, as are employment locations with a large bicycle-commuter population. Bicycle attendant duties become more



Attended bicycle parking at the Giant's Ball Park. provided by the SFBC.

cost-effective when shared with other duties, such as garage attendant, security guard, or private bicycle maintenance and repair operator. Attendant parking should be particularly considered for locations with heavy demand for bicycle parking but no existing bicycle parking facilities, such as at the many BART stations without bicycle lockers. Bicycle access to transit stations is discussed in detail in Chapter 4, “Transit and Bridge Access.”

San Francisco, in accordance with Traffic Code Sec. 815, requires monitored bicycle parking at most large permitted events. Ordinance 323-98 (11/19/98) added Sec. 815, “Monitored Bicycle Parking at Public Events,” to the Traffic Code and authorized ISCOTT to develop guidelines for monitored bicycle parking requirement at large permitted events. The current ISCOTT guideline requires bicycle parking provisions in site plans as a permit condition for events with 2000 or more anticipated participants.

Sec. 815 allows event organizers to charge a fee for monitored bicycle parking service, but some organizations have provided free bicycle parking service. To encourage the use of valet parking, it should be made available at no cost or on a “donation” basis. Although DPT does not require event organizers to use a particular bicycle parking organization, it does provide the contact information for the San Francisco Bicycle Coalition (SFBC) because they have successfully provided free (donation-based) valet bicycle parking for many years at many public events such as the Fort Mason Blues Festival; the Landscape Garden Show; and various street fairs utilizing volunteers and inexpensive equipment (such as portable fences, portable racks, and cables).

EVENT PARKING FOR BICYCLES

To relieve the impact of traffic and parking congestion, event sponsors should also take an active role in promoting bicycling to the event by advertising the valet bicycle parking. Bicyclists should be encouraged to use the valet parking, thereby removing the obstructions to pedestrian flow created by bicycles locked to trees and posts.

BICYCLE PARKING OUTREACH

Action 3.14 Develop and maintain a DPT, City-distributed, bicycle-parking outreach campaign in print, audio-visual, and web-based formats to provide relevant bicycle-parking information such as garage locations and locker availability.

Action 3.15 Work with the San Francisco Police Department (SFPD) to make bicycle theft investigation a higher priority and to create a better system for returning recovered bicycles to their owners.

Public information is important to an effective citywide bicycle parking program. Many facilities are not visible to the public due to their location within garages and often are not obvious to employees in a specific building where bicycle parking is located. Additional outreach efforts to provide information about the location and accessibility of bicycle parking, will help to ensure

that City investments are well used and will provide encouragement to potential bicycle commuters.

The City's Bicycle Program currently advertises the availability of bicycle parking in City-owned (and private) garages by:

- issuing signs depicting the availability of parking (to be posted on the outside of the garage where cyclists are likely see it);
- printing and distributing thousands of maps showing the location of bicycle parking; and
- posting information on the Bicycle Program website.

The DPT Bicycle Program should incorporate the following components into this bicycle parking information campaign:

- Conduct a publicity campaign informing cyclists and potential cyclists of the availability and location of bicycle parking;
- Provide a DPT fact sheet showing free and fee-based bicycle parking available at City-owned Parking Garage;
- Develop and publish a comprehensive high-quality brochure, including a map, showing bicycle parking locations in appropriate detail;
- Modify its existing computer database of all publicly-accessible parking facilities in the City to calculate required bicycle parking in private garages in accordance with existing Planning Code Section 155.2; and
- Create a Bicycle Theft Task Force in cooperation with the Bicycle Advisory Committee (BAC) and the SFBC. This task force would determine ways to reduce bicycle theft within the City and recommend improvements to bicycle parking facilities where appropriate.

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4. TRANSIT AND BRIDGE ACCESS

TRANSIT AND BRIDGE ACCESS GOALS AND OBJECTIVES

Goal:

Expand Bicycle Access to Transit and Bridges

Objectives:

- Provide bicycle access to transit vehicles whenever feasible;
- Provide convenient bicycle access and bicycle parking at transit stations; and,
- Provide bicycle access to all bridges whenever feasible.

RECOMMENDED TRANSIT AND BRIDGE ACCESS ACTIONS

City staff should prioritize the following policies and actions in order to implement the goals for improved bicycle access to transit services and bridges in San Francisco:

Action 4.1

Create a Muni policy that explicitly permits folded bicycles on all San Francisco Municipal Railway (Muni) vehicles.

Action 4.2

Develop a pilot program to provide bicycle access on light rail vehicles for a trial period.

Action 4.3

Update Muni bicycle accessibility guidelines and widely distribute and publicize these guidelines.

Action 4.4

Work with Bay Area Rapid Transit (BART) to analyze existing policy, identify expanded bicycle access times, and create a trial program for non-folding bicycle access in both directions on Transbay peak period trains.

Action 4.5

Work with Caltrain, which is a major commuter connection to downtown San Francisco, to expand bicycle access on its fastest service “Baby Bullet” trains.

Action 4.6

Ensure that all San Francisco transit stations, including the new Transbay Terminal, provide barrier-free bicycle access and state-of-the-art bicycle parking facilities.

Action 4.7

Work with San Francisco Bay Area transit operators and the Metropolitan Transportation Commission (MTC) to develop, implement, maintain, expand, and enforce improved inter-modal bicycle access.

Action 4.8

Promote bicycle parking “stations” at transit hubs that provide secure, monitored bicycle parking, commuter information, and bicycle maintenance services.

Action 4.9

Allow cyclists with disabled bicycles (due to mechanical failure or collision) to bring them on Muni vehicles, interior space permitting and at the vehicle operator’s discretion, when the Muni vehicle either does not have bicycle racks or have racks that are full.

Action 4.10

Install bicycle racks on all Muni-operated buses, and all other transit buses operating in San Francisco, including the 45-foot Golden Gate Transit equipment.

Action 4.11

Work with the California Department of Transportation (Caltrans) and the Golden Gate Bridge, Highway and Transportation District (GGBHTD) to provide improved bicycle access to and upon all San Francisco bridges, including the design and building of a multi-use path on the west span of the Bay Bridge.

Action 4.12

Work with Caltrans and the MTC in continued studies of the Bay Bridge pathway to ensure that such a facility integrates with San Francisco’s on-street bicycle facilities in a manner that is safe and convenient for bicycle commuter and recreational cyclists.

INTRODUCTION

The integration of bicycle and transit use on a local and regional basis enhances the role of each in providing convenient transportation. It is essential in maximizing the bicycle’s transportation utility for medium-range trips, whether for commute, recreational, or utilitarian purposes. Bicycle access should be provided to all transit modes, including bus, streetcar, rail, and ferry. Bicycles

access should also be provided on San Francisco's bridges whenever feasible to ensure maximum connectivity.

Access to transit vehicles, like bicycle parking at transit stations, provides an inter-modal link that improves the efficiency and range of both transit and bicycling. Access to transit vehicles themselves provides maximum mobility at both ends of the transit trip. However, transit vehicles are often too crowded to accommodate many bicycles. The policies below are intended to maximize the opportunity for transit users to bring bicycles on board while recognizing that secure bicycle parking at transit stations will facilitate many bicycle-and-transit inter-modal trips. The policy recommendations for San Francisco Muni may be enacted by the San Francisco Municipal Transportation Agency (MTA). San Francisco does not have jurisdiction over the other transit agencies listed. These recommendations constitute an official request to those agencies to consider these suggestions for improving the bicycle utility of their systems.

Good bicycle access to transit has two major components:

- Well promoted parking at transit stops, including:
 - secure facilities;
 - enough spaces to meet the demand; and,
 - available at an affordable cost; and,
- Bicycle transport on transit vehicles, including:
 - access at all reasonable hours;
 - enough spaces to meet the demand; and,
 - no additional charge beyond the standard passenger fare.

TRANSIT AND BRIDGE ACCESS ACTION FRAMEWORK

It is important to provide bicyclists with ease and efficiency of access to all of the major public transit modes serving San Francisco including rail, light rail, bus, and ferry. This access must be provided to both the transit vehicles themselves and at transit stops and stations.

MUNI BICYCLE ACCESS

- | | |
|-------------------|--|
| Action 4.1 | Create a Muni policy that explicitly permits folded bicycles on all San Francisco Municipal Railway (Muni) vehicles. |
| Action 4.2 | Develop a pilot program to provide bicycle access on light rail vehicles for a trial period. |
| Action 4.3 | Update Muni bicycle accessibility guidelines and widely distribute and publicize these guidelines. |

Muni is the seventh-largest public transit system in the United States, providing local transit service by bus, light rail ("Metro"), historic streetcars, and cable cars. Currently, none of Muni's rail vehicles permit bicycles on board and bicycle racks are not feasible from an engineering and

safety standpoint. However, Muni's light rail vehicles could provide an important service for bicyclists by permitting bicycles on board.

Almost every light rail system in North America allows bicycles on-board (including the Santa Clara Valley Transportation Authority, Sacramento Regional Transit District, and the Los Angeles County Transportation Commission).

A Muni pilot program to permit bicycles on light rail vehicles would provide a test of the safety and operational impacts of allowing bicycles on board. Specific design measures should be developed to ensure that bicycle access does not interfere with other passengers' convenience or safety, particularly for the elderly and small children. Muni should implement such a pilot program, beginning on the Third Street light rail line, as proposed as a mitigation measure in the 1998 Third Street Light Rail Project Environmental Impact Report¹. Although Muni and the Department of Parking and Traffic (DPT) still need to determine light rail vehicle program regulations, they should consider the following:



Photo credit: Valley Transportation Authority

Bicycle commuter enters a VTA LRV during commute hour.

- Bicycles (except folding bikes) should not be allowed on crowded vehicles;
- Off-peak hours commute hours should first be explored in a trial allowing bicycles on LRVs;
- Bicyclists with proof of payment should board at one of the back doors and remain near that back door while on-board; and
- Bicyclists needing to purchase a ticket should pay at the front door and remain near the front door while on-board, unless the operator instructs them otherwise.

It is important that Muni and DPT develop criteria that can be used to evaluate the success of this trial program. This pilot program should conclude with recommendations for continuation or modification to the service and accompanying regulations.

In addition to LRV access, Muni bicycle guidelines should also provide clear guidance to transit operators and bicyclists regarding the front loading bicycle racks on buses; and the allowance of folding bicycles within Muni vehicles. Directions and promotional material on how to use the front loaded racks should be developed as part of these guidelines. Clear policy direction should also be included regarding the allowance of folded bicycles on all buses and LRVs.

¹ Since the DEIS/DEIR finds on page 5-2 that the project "precludes the future development of a formalized (striped) bike lane...", The Third Street Rail Project Preliminary DEIS/DEIR recommends on page 3-68 "that Muni establish a policy providing for the accommodation of bicycles on the Third Street light rail vehicles."

BAY AREA RAPID TRANSIT ACCESS

Action 4.4

Work with Bay Area Rapid Transit (BART) to analyze existing policy, identify expanded bicycle-access times, and create a trial program for non-folding bicycle access in both directions on Transbay peak period trains.

BART provides heavy rail service for the Bay Area and San Francisco, including eight stations within San Francisco. East Bay counties are connected to San Francisco via BART's Transbay Tube and service south of the City has recently been extended to the San Francisco International Airport, with a new Caltrain transfer station in Millbrae. Since bicycles are currently prohibited from using the Bay Bridge, BART is a critical Transbay link.



Photo credit: BikeMap.com

Commuter bicycles on the Caltrain Cab Car.

Bicycle access has improved from no access when BART first opened to the current access rules² created through BART's Bicycle Accessibility Task Force (BBATF).

Cyclists can now board more trains and are allowed in all cars except the first. Although BART allows bicycles at "off-peak" hours, it prohibits bicycle access on "commute" trains in the "commute direction." This is a strong disincentive for Transbay bicycle-commuters. Existing bicycle access restrictions limit BART as a commute option for many cyclists, thereby impeding the advantages of inter-modal bicycle commuting.

CALTRAIN ACCESS

Action 4.5

Work with Caltrain, which is a major commuter connection to downtown San Francisco, to expand bicycle access on its fastest service "Baby Bullet" trains.

Caltrain provides commuter rail service to downtown San Francisco's Fourth & Townsend Streets Station from 34 stations to the south, including Millbrae, Hillsdale, Palo Alto, San Jose and Gilroy. Bikes are allowed on every train in the "bike car," designated with a yellow bicycle sticker. Each "bike car" can accommodate up to 32 bikes. All trains have one "bike car" and some have two. Cyclists must board and exit trains after other passengers. Detachable or

² A full description of the BART Bicycle Rules can be found at the BART website:
<http://www.bart.gov/guide/bikes/bikeOverview.asp>

collapsible trailers or large, bulky attachments that expand bicycle width, such as saddlebags, backpacks or briefcases, are not permitted. Cyclists must be at least 12 years old. Since the “baby bullet” began its operation, the bicycle capacity on each train has been reduced. Bicycle capacity should be increased along this regional rail line.

TRANSIT STATION ACCESS

Action 4.6 Ensure that all San Francisco transit stations, including the new Transbay Terminal, provide barrier-free bicycle access and state-of-the-art bicycle parking facilities.

The new Transbay Terminal will serve as the City’s major transit hub, linking bus and light rail lines, as well as Caltrain commuter rail service and potentially high-speed intercity rail service. The new multi-modal station, which will be built on and around the current location, has received final environmental clearance, and moved closer to being built. Additionally, the surrounding redevelopment plan calls for thousands of housing units, offices, and retail space: basically, a new San Francisco neighborhood. Large numbers of automobiles move through this employment center and transportation hub every day. In such a compact downtown neighborhood bicycle facilities can provide an important source of congestion relief.



Photo credit: Transportation Alternatives Magazine

Secure bicycle parking at Penn Station (station serves 500,000 rail passengers per day).

In all new and existing transit facilities, the City should be involved in the planning and design processes to ensure that convenient bicycle access by way of elevators, ramps, or escalators is provided to all building levels, particularly those with train platforms. Adequate bicycle parking in and around the stations should also be provided.

MULTI-MODAL TRANSIT STATIONS

Action 4.7 Work with San Francisco Bay Area transit operators and the Metropolitan Transportation Commission (MTC) to develop, implement, maintain, expand, and enforce improved inter-modal bicycle access.

The existing Transbay Terminal serves approximately 20,000 bus passengers per day and the newly renovated Caltrain 4th & King Streets Station serves approximately 12,200 rail passengers daily. The planned extension of Caltrain to the new Terminal will likely bring a sharp increase in the demand for bicycle facilities in and around the station, such as access to all platforms, bicycle parking solutions, and routes to and from the station.

The existing Transbay Terminal will be replaced by an inter-modal facility serving Caltrain, AC Transit, Golden Gate Transit, SamTrans, Greyhound, Amtrak bus service, and Muni bus and light rail lines. It will have an underground connection to BART. The new Transbay Terminal will bring all modes of transportation to downtown San Francisco—immediately accessible to the City’s active core—and address the Bay Area’s most pressing need for greater inter-connectivity of transit service. By the year 2020 the Transbay Terminal will potentially serve 10,000 bus passengers and 12,000 train passengers during peak hours, with capacity for considerably more. A total of 50 bus bays will meet the 2020 growth forecast for all operators currently using the Transbay Terminal and it will have sufficient latent capacity to meet further service expansion. It is critical that the overall design for this new facility address bicycle access, circulation, and storage in order to promote multi-modal commute trips.

For projects under the jurisdiction of the San Francisco Redevelopment Agency (SFRA) and joint powers agencies such as the Transbay Joint Powers Authority (Transbay Terminal), these agencies should consult with the DPT bicycle program to ensure adequate bicycle facilities and bicycle access are provided on all street and/or building designs.

BART BICYCLE STATION ACCESS AND PARKING

Bicycle access to underground BART stations is restricted to stairs and elevators that were not originally designed to accommodate bicyclists. Access fare gates are also designed for pedestrians only, requiring that bicyclists use the emergency/wheel chair gate for their bicycles and then return to the pedestrian entrance. This station infrastructure can be improved through future station renovations. Recently constructed BART stations provide a wide fare gate that can accommodate wheelchairs and bicycles.

The following is a list of BART Stations in San Francisco. It is recommended that DPT support and assist BART in its plan to improve station access, specifically including, the installation of parking improvements and bicycle stair channels.

Table 4-1
BART’s Recommended Access and Parking Improvements³

Station Location	Recommended Facility Improvement	BART’s Priority
16 th Street	Parking Improvement	High
16 th Street	Stair Channel Priority	Immediate
24 th Street	Parking Improvement	High
24 th Street	Stair Channel Priority	Medium
Balboa Park*	Parking Improvement	Medium
Balboa Park*	Stair Channel Priority	Medium
Civic Center*	Parking Improvement	High
Civic Center*	Stair Channel	High
Embarcadero*	Parking Improvement	Low
Embarcadero*	Stair Channel	Immediate
Glen Park*	Parking Improvement	Medium
Glen Park*	Stair Channel	Medium

³ BART Bicycle Access and Parking Plan; Volume 1.

4. TRANSIT AND BRIDGE ACCESS

Station Location	Recommended Facility Improvement	BART's Priority
Montgomery*	Parking Improvement	High
Montgomery*	Stair Channel	Medium
Powell*	Parking Improvement	High
Powell*	Stair Channel	High

* Denotes a Shared Muni and BART station

MUNI BICYCLE STATION ACCESS AND PARKING

Several Muni Metro Stations are shared with BART (see Table 4-1). These shared stations are within BART's jurisdiction. The City should assist BART in their efforts to improve access at shared stations. DPT should also request that the MTA adopt designs similar to those being employed in BART stations to improve bicycle access and bicycle parking at Muni Metro Stations. Issues of pedestrian clearance and rider safety should be addressed. As access to Muni light rail vehicles is instituted, signage, stair channels and adequate bicycle parking should be installed at the Castro Street, West Portal, Forest Hill, and Church Street Stations.

Right-of-way (ROW) bicycle rack installation at non-underground Muni Metro Stations should be actively encouraged by Muni, and implemented by the DPT Bicycle Program. DPT's Bicycle Program has installed bicycle racks near Muni Metro and BART Stations, but DPT does not install racks within the stations.

CALTRAIN

Fourth and Townsend Streets Station

See the discussion below under the Bike Stations heading.

Twenty-Second Street Station

Bicycle access improvement is strongly recommended at this station. The current stair access is inadequate to encourage more bicyclists to use this station.

Bicycle Parking is limited at this station. Previously, commuter bicycle lockers were installed at Muni's Woods Maintenance Yard, adjacent to the station. These lockers served bicycle commuters accessing the 22nd Street Station. However these lockers were removed due to security concerns after September 11, 2001. It is recommended that Muni and Caltrain improve and reinstall the commuter bicycle parking for this station once security issues have been addressed.

BIKE STATIONS

Action 4.8

Promote bicycle parking "stations" at transit hubs that provide secure, monitored bicycle parking, commuter information, and bicycle maintenance services.

Bike stations are a wonderful way to promote inter-modal transportation. Bike Stations allow commuters, shoppers, and tourists to bicycle to a transit hub, switch to the transit system, and also receive affordable, secure bicycle parking or repair services. San Francisco is developing two Bike Stations: Embarcadero BART and Caltrain at Fourth and Townsend. At the urging of

the DPT Bicycle Program and the San Francisco Bicycle Coalition (SFBC), Caltrain secured funding for and is currently designing a "BikeStation" at the Fourth and Townsend Streets Station. This facility is within Caltrain's jurisdiction, but is being supported by several agencies and organizations including the Department of the Environment (SF Environment), the SFBC, and DPT Bicycle Program.

BUS-BICYCLE ACCESS

Buses provide a critical trip link for many bicyclists traveling longer commute distances, shopping where larger purchases limit safety or ability to complete a round trip, or when weather conditions limit the desirability and comfort of a bicycle trip.

Unless noted otherwise, all bus transit providers serving San Francisco:

- use front-mounted bicycle racks that hold two bicycles;
- allow only single-rider, two-wheel bicycles; and,
- require cyclists to be able to load and unload their bikes without help from the operator.



Front-mounted bicycle rack on the 38 Geary.

MUNI BUS ACCESS

Action 4.9 Allow cyclists with disabled bicycles (due to mechanical failure or collision) to bring them on Muni vehicles, interior space permitting and at the vehicle operator's discretion, when the Muni vehicle either does not have bicycle racks or have racks that are full.

Action 4.10 Install bicycle racks on all Muni-operated buses, and all other transit buses operating in San Francisco, including the 45-foot Golden Gate Transit equipment.

Nearly all of Muni's fleet, about 900 buses, carries up to two bicycles on a front-mounted bicycle rack. No operational difficulties associated with this rack type have been identified and Muni should continue to provide bicycle racks on all of its buses and ensure existing racks are maintained.

Regional Bus Transit Access

The San Francisco Bay Area is served by many transit operators. SamTrans, AC Transit, and GGT each accommodate bicycles on their buses, as described below. Since multi-modal bicycle

commuters and recreational riders depend on one or more of these transit operators, City staff should work with the MTC and regional transit operators to improve the capacity and convenience of inter-modal bicycle access to San Francisco.

SamTrans Bus Access

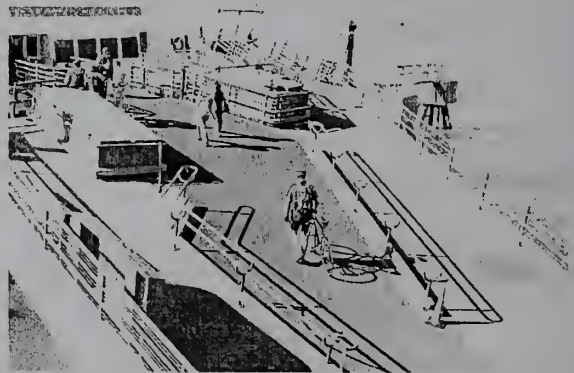
SamTrans, operated by the San Mateo County Transit District, provides bus service throughout San Mateo County and into parts of San Francisco and Palo Alto. The entire SamTrans fleet of buses is equipped with front-mounted bicycle racks. Two additional bikes are allowed inside buses, depending on passenger loads. SamTrans has no age limitation for riders bringing bikes onto buses.

AC Transit Bus Access

AC Transit, operated by The Alameda-Contra Costa Transit District, serves 13 cities and adjacent unincorporated areas in Alameda and Contra Costa Counties. AC Transit operates local East Bay bus service and 26 commuter bus routes from the East Bay to the Transbay Terminal in downtown San Francisco. The entire AC Transit fleet of Transbay buses can accommodate at least two bicycles on each bus. In addition to the exterior racks, the 45-foot buses that AC Transit operates over the San Mateo Bridge carry four additional bicycles in folding racks located inside the cargo bays.

Golden Gate Transit Bus Access

GGT provides regional bus service in San Francisco, Marin and Sonoma Counties, as well as limited local service within Marin County. Although GGT buses up to 40 feet long have bicycle racks, they should outfit their 45-foot vehicles as now permitted by state law and already implemented by AC Transit (see above). GGT schedules buses without racks to routes with more frequent service so that cyclists can easily wait for a bus that does have a rack.



Bicyclist accessing the Blue & Gold Ferry.

Ferry Bicycle Access

Two ferry operators provide service to San Francisco: Golden Gate Ferries and Blue & Gold Ferries. Both services allow bicycles free of charge. Golden Gate Ferries operate from San Francisco to Larkspur and Sausalito and provides 25 bicycle spaces (15 on catamarans) on a first-come, first-serve basis. Blue & Gold Ferries operate from San Francisco to Sausalito, Tiburon, Alameda/Oakland, Vallejo and Angel Island and allow up to 20 bicycles per boat at the discretion of the captain. No policy change is recommended at this time.

Bridge Bicycle Access

Action 4.11 Work with the California Department of Transportation (Caltrans) and the Golden Gate Bridge, Highway and Transportation District (GGBHTD) to provide improved bicycle access to and upon all San Francisco bridges, including the design and building of a multi-use path on the west span of the Bay Bridge.

San Francisco is served by two major regional bridges: the Golden Gate Bridge to the north and the San Francisco-Oakland Bay Bridge to the east. Several local bridges within San Francisco also exist. Whenever new local bridges are constructed, bicycle travel should be accommodated.

Golden Gate Bridge

The Golden Gate Bridge is operated by the GGBHTD. Cycling distance across the bridge is 1.7 miles including the bridge approaches. Cyclists approach the bridge from San Francisco through the Presidio by way of Lincoln Boulevard, and from Marin County by way of Alexander Avenue from downtown Sausalito or through Fort Baker. Raised sidewalks provide direct two-way bicycle access on both sides of the bridge, although cyclists may only use one side of the bridge per the schedule presented in Table 4-2.

Table 4-2

Bicycle Access on the Golden Gate Bridge

Day	October – May Pacific Standard Time	June – September Daylight Saving Time	Weekdays	Weekends/ Holidays
Morning	6:00am to 3:30pm	5:00am to 3:30pm	East Sidewalk	West Sidewalk
Evening	3:30pm to 6:00pm	3:30pm to 9:00pm	West Sidewalk	West Sidewalk
Night	6:00pm to 6:00am	9:00pm to 5:00am	East Sidewalk	East Sidewalk

Since 1992, cyclists have been allowed night access to the bridge via a monitored security gate. When a cyclist pushes a call button, a toll officer responds. The officer verifies that the call is from a cyclist via a camera and video monitor and remotely opens the gate. After 15 seconds, the gate automatically closes. The security gate access program was financed through San Francisco's Transportation Development Act Article 3 funds, and was a cooperative venture involving the GGBHTD, the San Francisco Bicycle Advisory Committee (SFBC), the SFBC, and the DPT Bicycle Program.

The GGBHTD added a railing to improve bicyclist and pedestrian safety in 2003. The rail consists of seven horizontal cables, spaced 6 inches apart, connected to steel posts every 12-1/2 feet. The top rail is 4 feet-6 inches high. At the 4-foot mark, it curves toward the walkway and culminates in a handrail.

Additional recommended improvements for bicyclists should include design improvements to the south approach to the west sidewalk. The current 90 degree turn and narrow transition from

the bridge sidewalk to the paved path is difficult for bicyclists to navigate, as is the paved pathway itself as it descends under the bridge. Alternative designs and routes should be analyzed in an engineering feasibility study to determine if safety and convenience improvements can be made. Direct, straight-line access to the west sidewalk should be considered.

San Francisco-Oakland Bay Bridge

There are no sidewalks on the 7-mile long Bay Bridge and bicycles are not allowed. However, bicycles are accommodated in this corridor at various times on BART, the Caltrans Bicycle Commuter Shuttle, and AC Transit. The shuttle is a 12-passenger van that tows a specially built trailer with 12 bicycle racks. It operates nonstop between the Transbay Terminal in San Francisco and the MacArthur BART Station in Oakland only during peak commute periods on a 45-minute headway. The fare is \$1.00 each way. This shuttle is funded as part of the Bay Bridge operational budget. The new Transbay Terminal must provide a conveniently located shuttle stop (both convenient to bicyclists and to bridge access).



Image credit: NewBayBridge.com, 2004

Photo rendering of the proposed Bay Bridge bicycle and pedestrian pathway (view heading toward Oakland).

Bicycle Path on the Bay Bridge

Action 4.12

Work with Caltrans and the MTC in continued studies of the Bay Bridge pathway to ensure that such a facility integrates with San Francisco's on-street bicycle facilities in a manner that is safe and convenient for bicycle commuter and recreational cyclists.

The main span of the new East Span of the Bay Bridge will be a single-tower self-anchored suspension design. In 1998, MTC (acting as the Bay Area Toll Authority, or BATA) approved \$50 million to incorporate a bicycle/pedestrian path on the new bridge. The 15.5-foot-wide path will run along the southern edge of the eastbound deck, from Yerba Buena Island to Oakland and will be positioned one foot above the motor vehicle deck so as to shield users from traffic noise and exhaust.

Two primary alternatives were studied for the bicycle/pedestrian path: providing a single path cantilevered off the south side of the span, or separating bicyclists and pedestrians by building two pathways, one on either side of the span. Decision-makers also looked at placing the path above or below the motor vehicle deck.

Ultimately, the Engineering and Design Advisory Panel, the Bay Bridge Design Task Force, and the MTC/BATA Commission adopted a one-path option because (a) the path on the north side of the westbound span heading uphill from Oakland to Yerba Buena Island could have interfered with motorists' views, and (b) for security sake, it would be better to concentrate what may be, on many days, a modest number of path users on one facility, instead of spreading them over two.

In 2000, Caltrans launched a \$3 million study (funded by MTC/BATA) to look at the technical feasibility and cost of extending the path to the west span. Completed in 2001, the study found that a west span path could technically be constructed; however, the American Association of Cost Engineers estimated the cost of such a path to be \$160.4 million.⁴

⁴ Source: I-80 SFOBB West Span Pathway Study: Feasibility Report (CH2M HILL)
April 26, 2004. http://www.mtc.ca.gov/projects/bay_bridge/bbbike.htm

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5. EDUCATION

EDUCATION GOALS AND OBJECTIVES

Goal:

Educate the general public and targeted population about bicycle safety.

Objectives:

- Create, fund, and implement official Department of Parking and Traffic (DPT) bicycle-safety curricula for the general public and targeted populations.
- Create, fund, and implement DPT bicycle-safety outreach campaigns for motorists, bicyclists, and the general public.

RECOMMENDED EDUCATION ACTIONS

City staff should place a high priority on the following actions in order to implement the goal of educating the public about bicycle-safety:

Action 5.1

Provide DPT bicycle-safety information to diverse age, income, and ethnic populations.

Action 5.2

Provide DPT bicycle-safety information in languages that are widely used within San Francisco such as Spanish and Cantonese.

Action 5.3

Partner with other agencies, where appropriate, to distribute DPT bicycle-safety education materials in mass mailings.

Action 5.4

Create a web-based bicycle education traffic school curriculum as an option in lieu of other pecuniary penalties for traffic law violators.

Action 5.5

Increase DPT participation in Bike to Work Day activities by providing resources and materials as staff availability and funding allow.

5. EDUCATION

Action 5.6

Implement new outreach campaigns for improved bicycle facilities, especially those located on the Bicycle Route Network.

Action 5.7

Develop DPT bicycle-safety classes for City Employees.

Action 5.8

Develop a DPT bicycle-safety workshop for transit operators and other large fleet-vehicle operators.

Action 5.9

Develop bicycle-safety curricula for use in the San Francisco Unified School District (SFUSD) and San Francisco public colleges.

Action 5.10

Periodically evaluate and adjust, where appropriate, DPT's bicycle-safety program.

INTRODUCTION

Bicycle-safety education can be divided into two major categories: those that develop safety awareness by providing information to the public through outreach channels such as media campaigns, brochures, and websites; and those that teach specific bicycle handling and traffic maneuvering skills through classroom instruction combined with practical on-bike training.

Motorists and bicyclists have rights and responsibilities for safe roadway sharing. However, motorists endanger bicyclists' safety when they do not view bicyclists as legitimate road users. Furthermore, both motorists and bicyclists endanger themselves and others by violating certain traffic laws. Ambiguities in the California Vehicle Code (CVC) or road users' education, when combined with unaccommodating roadway designs, can exacerbate confusion and conflicts between automobiles and bicycle traffic.¹

Although completion of the bicycle facility upgrades recommended in Chapter 2 of this plan (Bicycle Route Network), and revision to traffic codes, when necessary, can improve safety, bicycle-safety education for motorists and bicyclists that teaches proper roadway behavior is an essential ingredient for improving bicyclists' safety in San Francisco.

The following sections present information on bicycle-safety education in San Francisco for the general public and targeted populations. While similar safety themes are relevant for all audiences, each group requires a tailored approach. This chapter recommends actions that are intended to create a new official City bicycle-safety education program that draws upon existing national best practices, improvements to existing, but limited bicycle educational materials, and adaptation of bicycle safety specifically to San Francisco's unique bicycling environment.

¹ For example, CVC references to a bicyclist using a crosswalk when crossing a roadway from a multi-use path are vague.

Motorist education is vague for motorists. Many do not realize that a motorist shall make right hand turns from a bicycle lane (CVC 21717)

EDUCATING THE GENERAL PUBLIC

Action 5.1 Provide DPT bicycle-safety information to diverse age, income, and ethnic populations.

The purpose of general bicycle-safety classes or media campaigns is to educate the general public about the rights and responsibilities of bicyclists and motorists and to improve the overall perception of bicycle transportation. This plan discusses previous and existing bicycle-safety campaigns in San Francisco and makes recommendations for improvement.

The DPT bicycle-safety program needs to initially focus upon curricular development. The League of American Bicyclists (LAB) curriculum provides a valuable base for the creation of basic bicycle safety program. It should be locally adapted to address San Francisco's unique cycling environment and to targeted populations such as existing urban cyclists, potential cyclists, motorists, children, commuters, and City employees.

The following general actions provide a framework for improving the City's mass media educational outreach campaigns presenting bicycle-related information. The City has made much progress over the past several years in promoting awareness of bicycle safety issues and encouraging bicycle use. Events such as "Bike to Work Day," materials such as the *Safe Bicycling in San Francisco*² booklet, and media campaigns, such as the Coexist Campaign, are examples of this progress. Bicycle Program staff should explore additional opportunities for creative and effective dissemination of bicycle-safety education.

The City should continue to expand upon existing educational media campaigns, including: printed brochures, maps, stickers, posters, radio and television ads, events, mailings, online information, billboards, and ads posted on public transit vehicles, bus stops, and stations. Each of these tactics can encourage bicycling, while building a fundamental awareness of bicycle safety.

BICYCLE SAFETY OUTREACH

Action 5.2 Provide DPT bicycle-safety information in languages that are widely used within San Francisco such as Spanish and Cantonese.

Action 5.3 Partner with other agencies, where appropriate, to distribute DPT bicycle-safety education materials in mass mailings.

Coexist Campaign

As a result of the City's compact geography and multi-modal transportation options, bicyclists must often share the road with automobiles. In response to growing concerns over how to encourage motorists and bicyclists to operate in a legal and safe manner, the Coexist Campaign was developed jointly by the DPT and the San Francisco Bicycle Coalition (SFBC). Important concepts used in developing this campaign included:

² Safe Bicycling in San Francisco can be downloaded from the DPT website at www.bicycle.sfgov.org

5. EDUCATION

- creation of a positive image for both cyclists and of motorists;
- encouragement of respect among road users; and,
- promotion of safe bicycling behavior.

In addition to placing posters (with the message of encouraging motorists and cyclists to share roadway space safely) on Muni buses and at transit shelters throughout the City, the Coexist Campaign also installed permanent Bicycles Allowed Full Use of Lane (BAFUL)/Change Lanes To Pass signs² alerting motorists and bicyclists that CVC Section 21202 permits bicycles to use the full lane. On certain streets, the “door zone” extends so far into a lane that cyclists must position the bicycle fully in the lane to operate safely. Although more education on this essential cycling skill is needed, the BAFUL signs are a good start.

Printed Materials

Safe Bicycling in San Francisco is a 34-page handbook that covers a wide range of topics for beginner, intermediate, and advanced cyclists. The handbook can be downloaded from the Bicycle Program website, or obtained for free from DPT. The handbook includes chapters addressing bicycle fit and equipment, proper helmet use, simple maintenance checks, secure bicycle-parking tips, basic skills for riding in traffic, more advanced techniques for lane positioning and intersection movements, and tips for using transit, riding at night, riding in inclement weather, and road users’ rights and responsibilities. San Francisco residents can also be reached via direct mail. Bicycle safety and promotion materials could be included with residential parking permits or other mass mailings distributed by the City. An annual mailing of a simple brochure or pamphlet on safe bicycle practices could be included in existing mailings from a variety of agencies and companies.



2003 campaign advertisements encouraging motorists to obey the law and exercise caution when passing bicyclists.

² To view BAUFL Report : http://www.bicycle.sfgov.org/site/uploadedfiles/dpt/bike/Article_BAUFL_Sign.pdf

Electronic Materials

The DPT Bicycle Program website is an affordable, flexible way to reach most San Francisco residents, commuters, and tourists from around the world.

The Bicycle Program Home Page, <http://www.bicycle.sfgov.org>, provides educational materials and informational resources such as San Francisco's official Bicycle Routes Network map with street gradients and contours, relevant reports and studies, and links to other useful websites.

Web-Based Education

Action 5.4 Create a web-based bicycle education traffic school curriculum as an option in lieu of other pecuniary penalties for traffic law violators.

DPT should create a web-based bicycle education traffic school option for traffic violators. Since motorists already have a strong incentive to participate in some type of traffic-school to mitigate issues surrounding their driver's license record and insurance costs, they are more likely to sign up. This is an excellent outreach opportunity because it pairs motorists who are already experiencing the consequences of their roadway behavior with exposure to how traffic maneuvers impact bicyclists. The program would also be valuable for bicyclists cited for moving violations. The curriculum should cover relevant traffic laws, share-the-road concepts, and traffic maneuvering skills.

EVENTS

Action 5.5 Increase DPT participation in Bike to Work Day activities by providing resources and materials as staff availability and funding allow.

Events such as "Bike to Work Day" are an effective way to promote bicycle transportation and encourage driver (and media) awareness of bicycle commuting. In previous years SF Environment, the SFBC, and the Metropolitan Planning Commission (MTC) have taken a very active role in organizing "Bike to Work Day." This Plan recommends that DPT increase its participation level in this event. Similar events could include bicycle-safety presentations made by volunteers to give interested community members basic bicycle safety tips as well as maintenance and riding techniques. These organized events also present opportunities to distribute safety products such as bicycle lights, helmets, reflective leg bands, stickers, rear-view mirror decals, and bumper stickers, as funding allows.



San Francisco Mayor Gavin Newsom with SFBC staff, DPT staff and others during the 2004 Bike to Work Day.

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REGIONAL INFORMATION PROGRAMS

Partnerships with regional agencies such as RIDES and the Metropolitan Transportation Commission are the most efficient and effective way for City staff to undertake large-scale regional education programs. Recent regional information distribution efforts including the 511-telephone hotline, for example, could target bicyclists from other cities that frequent San Francisco. San Francisco routinely attracts many visiting motorists to its employment centers, culinary delights, and cultural offerings. It is important, therefore, for the City to educate motorists regionally to increase the chance that visitors will properly share the roadway with cyclists.

The DPT Bicycle Program should become actively involved in the Bay Area regional LAB education program such as San Jose and Palo Alto have. The SFBC have begun teaching a four hour in-door class, which the City should actively support and enhance. The City's official bicycle-safety classes should draw upon LAB's ten hour BikeEd concepts and national best practices adapted to the particular challenges, such as steep hills, found in San Francisco. DPT Bicycle Program should take an active role in bicycle education for the City and County of San Francisco, and assist in the Bay Area education efforts, including the SFBC's. Currently, regional education classes are listed on the RIDES 511 website.³

BICYCLE FACILITIES EDUCATION

Action 5.6 Implement new outreach campaigns for improved bicycle facilities, especially those located on the Bicycle Route Network.

Electronic and printed educational materials using text and graphics, as appropriate, can educate people about the City's official Bicycle Route Network, secure bicycle parking (addressed in Chapter 3), bicycle shops and rental locations, traffic laws, and safe bicycling techniques. The City should explore innovative techniques: such as using private business funds to distribute bicycle-safety materials in exchange for advertising; and celebrity involvement to generate wider appeal. In addition to general bicycle transportation awareness, outreach campaigns should also educated the public about the proper meaning and use of specific bicycle-facilities.

This strategy is particularly important with newly introduced traffic control devices, such as the proposed "Shared Use Pavement Arrow," which will require a sustained educational campaign to meaningfully teach the intended behavior signaled by this new traffic device. The San Francisco Shared Lane Marking Study (Appendix B) explains the need for such an educational outreach campaign in greater detail. In summary, the study found that although the marking had an effect on motorists' and bicyclists' behavior and lane placement, the intended message of the marking was poorly understood by a significant percentage of survey respondents. Recommended themes for campaigns and public service announcements include:

- Encourage motorists to respect bicyclists' legal right to use the road;
- Encourage drivers to open car doors with caution to avoid "dooring" collisions with cyclists; and,

³ <http://www.rides.org/main/index.htm>

- Encourage safe cycling and driving practices including discouraging double-parking in bike lanes.

TARGETED BICYCLE EDUCATION

CITY EMPLOYEES

Action 5.7 Develop DPT bicycle-safety class for City Employees.

Since City employees routinely use vehicles in San Francisco, they should be formally trained in how to safely share the roadway with bicycles. DPT Bicycle Program staff should develop educational materials to teach employees of all City departments safe bicycling techniques. There were approximately 28,000 positions in the City and County of San Francisco in fiscal year 2001-02⁴. A concerted bicycle education effort for all City departments could also encourage an increase in the bicycle commute mode share for San Francisco, as well as educate City employees about the proper sharing of the road with different modes of travel.

TRANSIT OPERATORS

Action 5.8 Develop a DPT bicycle-safety workshop for transit operators and other fleet-vehicle operators.

Since many Muni vehicle share the roadway with bicyclists, DPT Bicycle Program staff should work with Muni and other transit agencies to develop a comprehensive training program for transit vehicle operators which promotes bicycle-safety awareness and effective road sharing techniques. Such a program should also be targeted toward shuttle and taxi drivers. Additionally, effective road sharing techniques should be included in all bicycle-safety curricula for cyclists.

BICYCLE EDUCATION FOR CHILDREN, YOUTH, AND ADULTS

Action 5.9 Develop bicycle-safety curricula for use in the San Francisco Unified School District (SFUSD) and San Francisco public colleges.

CHILDREN AND YOUTH

Bicycling and walking are the only independent transportation modes available to children. Bicycling allows children to explore their neighborhood, get exercise, and gain a valuable skill that is useful for a lifetime. Before the age of nine, most children do not have the maturity and developmental skills required to ride a bicycle in urban traffic situations. These skills include the development of wider peripheral vision and the ability to judge the spatial movement of objects: especially the speed and direction of automobiles. Parents of children under nine, therefore, should supervise their child's bicycle use by first learning the essential bicycle safety concepts themselves such as proper fit and type of bicycle equipment and basic mechanical skills needed to start, balance, steer, and stop a bicycle.

⁴ May 3, 2004. http://www.ci.sf.ca.us/wcm_controller/community_indicators/government/govtworkers/govtworkers.htm

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For elementary school children over eight years old, bicycle-safety education should include both the students and their parents. Although educational materials, including donated helmets and bicycle accessories might be distributed to school-aged children, it should be remembered that, whenever possible, both parents and children should learn action-oriented handling skills. Studies have shown that “videos, flyers, posters, coloring books, and assemblies are effective at introducing traffic safety rules, but unfortunately they have little bearing on children’s behavior. Bicycling safely requires physical skills that can best be learned through repetitive practice...”⁵

Qualified City staff should work with the SFUSD to develop bicycle safety curricula for all SFUSD classrooms. The League of American Bicyclists, the Federal Highway Administration’s Bicycle Safety Education Resource Center, and best practices from other cities should all be considered when developing these classes.



San Francisco bicycle education in progress.

In addition to technical skill and traffic laws, bicycle-safety education for children should promote bicycling as an enjoyable transportation method with positive lifestyle, health, and environmental benefits. Programs and practices that will make bicycling to school easier and safer, such as the Safe Routes to Schools Program, should also be promoted.

The recommended curricula to teach children bicycle safety should include:

- Recognition and avoidance of the most common bicycle collisions;
- Motorists’ and bicyclists’ rights, responsibilities, and roadway sharing behaviors;
- Proper bicycle helmet adjustment and fit⁶;
- Bicycle purchase, maintenance, and repair;
- Physical, social, and economic consequences of a bicycle collisions;
- Environmental, economic, and health benefits of bicycling;
- Proper bicycle locking techniques;
- Proper lane placement for typical bicycle maneuvers;

⁵ DiBrito, Roger and Sharon et al. *Left, Right & Left Again*, Volume I. 1994. Ride Safe, Inc., Warrenville, IL.

⁶ Although helmets are not a legal CA requirement for adults, they have been shown to reduce or prevent head injuries in bicycle collisions. Many adults, however, do not wear helmets while riding a bicycle, and those that do often wear them incorrectly, greatly diminishing their potential to protect them in the event of a collision.

- Bicycle handling skills; and,
- Other riding in traffic skills.

Some of the children-targeted bicycle education events conducted in the City have included: SAFE Annual Bicycle Safety Fair, Stop for Kids Safety, Walk n' Wheels Bike Fair, Trips for Kids, and the Earn-a-Bike program. The City also maintains a Safe Moves Trailer which contains mock traffic signals, plywood automobile and house cut-outs, and other props that enable DPT staff to build simulated roadway conditions to teach bicycle safety at neighborhood schools and community events throughout San Francisco. City staff should evaluate these and other bicycle education programs for children and prioritize funding for those that are deemed the most effective in teaching bicycle handling skills.

ADULTS

Most of teenage and adult bicyclists have not had formal bicycle education outside of learning the basic bio-mechanics required to ride a bicycle. Additionally, misconceptions, myths, and outdated advice can further erode adult bicyclists' safety. (For instance, some believe that one should ride a bicycle facing traffic rather than with the flow of traffic.)

San Francisco has the highest percentage of bicycle commuters of any U.S. city with a population of over 500,000 people. These riders are often familiar with the basics of safe cycling, but they have limited formal training in the proper techniques of bicycling in traffic. The compact nature of the City's streets and San Francisco's status as an employment center underscore the importance of teaching adults effective urban cycling skills. The DPT, therefore, should create a strategic plan for teaching bicycle safety to the City's diverse adult population. . DTP should also create a plan for offering the City's official bicycle education curriculum at local college and university campuses.

Possible topics to be addressed in adult bicycling education classes include:

- Helmet fitting demonstrations;
- Helmet fitting tips;
- Visibility techniques: see and be seen;
- Bicycle maintenance and repair;
- Safe stopping;
- "Door zone" awareness;
- Traffic maneuvers: lane positioning and safe turns;
- Riding predictably while scanning for conflicts and traffic;
- Relevant traffic laws;

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- Advanced bicycle commuting skills: inter-modal transit; and load distribution to maximize bicycle transportation utility; and,
- Bicycle “Fix-It” tickets (If implemented by the City).

PROGRAM EVALUATION

Action 5.10 Periodically evaluate and adjust, where appropriate, DPT’s bicycle-safety program.

Periodic program evaluation of outreach, advertising, and class offerings, is needed to improve quality, where needed, and help the bicycle-safety program achieve its intended effect. This should be an interactive process that monitors the efficacy of classes, workshops, and educational materials and allows changes to program elements where appropriate. Shifts in popular culture or demographics can have an impact on the program. Program evaluations can reveal opportunities and challenges for specific safety messages as well as identify new populations for targeted outreach. At each periodic review, DPT should try to identify subpopulations that have not been historically targeted, consider them for specific campaigns, and try to determine the effectiveness of such an approach.

6. ENFORCEMENT AND SAFETY

ENFORCEMENT AND SAFETY GOALS AND OBJECTIVES

Goal:

Improve bicycle safety through targeted enforcement of moving violations.

Objectives:

- Increase San Francisco Police Department (SFPD) enforcement of motorist and cyclist traffic violations that pose the greatest threat to safety;
- Provide Department of Parking and Traffic (DPT) bicycle safety education to police and those cited for moving violations that focuses on safe cycling, relevant traffic laws, and safe sharing of the roadway; and,
- Increase SFPD enforcement of motorist violations in bicycle facilities, including additional patrols to enforce the prohibition against double-parking in bike lanes.

RECOMMENDED ENFORCEMENT ACTIONS

City staff should place a high priority on the following policies and actions to realize the goal of improved bicycle safety through increased enforcement of moving violations in San Francisco:

Action 6.1

Place a high priority on SFPD enforcement of both bicyclist and motorist violations that most frequently injure cyclists.

Action 6.2

Develop a SFPD “fix-it ticket” program, in collaboration with the DPT, for bicycle equipment violations.

Action 6.3

Develop a method at the SFPD to systematically share non-collision bicyclist citations with DPT Bicycle Program.

Action 6.4

Develop and implement, in collaboration with the SFPD, a DPT bicycle-safety traffic school curriculum as an option for those cited for moving violations.

Action 6.5

Request that the California Bicycle Coalition work to change California Vehicle Code (CVC) 21754 (Passing on the right) so that it applies to bicycles.

Action 6.6

Clarify sections of the San Francisco Traffic Code that pertain to double parking in bicycle lanes and increase parking enforcement and fines for this violation.

Action 6.7

Post “no parking in bike lane” signs along bicycle lanes where double parking occurs.

Action 6.8

Increase the enforcement of the prohibition of operating motorcycles in bike lanes.

Action 6.9

Develop a DPT bicycle-safety curriculum for all SFPD police officers that focuses on the rights and responsibilities of bicycle traffic and techniques required for safe and legal sharing of the roadway.

Action 6.10

Increase SFPD and DPT bicycle-mounted patrols.

Action 6.11

Develop a system for hospitals, emergency rooms, and clinics to report all instances of bicycle injury to the SFPD and to the DPT Bicycle Program Manager.

Action 6.12

Implement a system to allow cyclists to report collisions directly to the Bicycle Program website.

Action 6.13

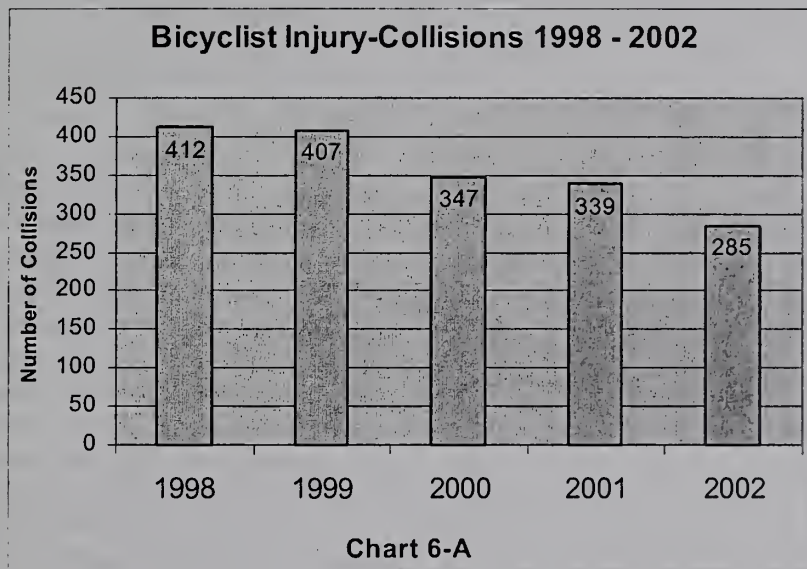
Inform cyclists that they are legally entitled to file a collision report when one is not initiated by the police.

Action 6.14

Develop a standardized procedure for reporting San Francisco Municipal Railway (Muni) bicycle-related incidents and make this information more transparently available to the Bicycle Program.

INTRODUCTION

This chapter presents recommendations for increased law enforcement as well as bicycle safety education to improve bicycling safety in San Francisco. When combined with well-planned facilities and educational programs, enforcement can be an effective means of enhancing safety for all road users. The good news about cycling safety in San Francisco is that the reported bicycle collisions have steadily declined from 412 in 1998 to 285 in 2002 (Chart 6-A)¹. At the same time, the number of bicycle commuters in the City nearly doubled between 1990 and 2000².



Although there is empirical and anecdotal evidence that bicycle collisions are underreported³, those that do get reported provide a strong indication of roadway behaviors that negatively impact cyclists' safety. Careful review of these bicycle collisions can help identify which violations should be prioritized for increased enforcement, assist with the planning of new bicycle facilities, and provide safety education opportunities. The discussion of recommended policies below is based on data from reported traffic collisions covering January 1, 1998 to June 30, 2003. All recommendations are based on analysis of this data and the knowledge that some collisions go unreported. (Actions 6.11 through 6.13 address unreported collisions).

¹ Does not include an average of eight reported non-injury, property-damage only bicycle collisions per year over the period analyzed

² U.S. Census 1990 and 2000 data (see this Plan's Introduction)

³ While the Statewide Integrated Traffic Records System (SWITRS) details 412 bicycle-related collisions for San Francisco in 1998, the Profile of Injury in San Francisco, published by the Department of Public Health (DPH) Injury Center (www.tf.org) shows that the San Francisco Fire Department (SFFD) Emergency Medical Services (EMS) Division responded to 441 incidents in which bicyclists were injured in 1998. Anecdotal evidence comes from collisions or near-misses that resulted in very minor or no injury, but were still caused by some of the same unsafe roadway behaviors outlined in this chapter.

ANALYSIS OF MOTORIST AND BICYCLIST MOVING VIOLATIONS

From January 1, 1998 to June 30, 2003, motorists were cited as the party at fault in a majority (56 percent) of the nearly 2,000 reported bicycle collisions. Bicyclists also shared responsibility in some of the high-frequency collision categories. Regardless of the primary cause of an automobile/bicycle collision, bicyclists are far more likely to be injured than motor vehicle operators. For example, bicyclists are injured in almost all reported collisions analyzed.

Improving San Francisco bicycle safety is the primary goal of this Plan's proposed bicycle education and enforcement strategies. Education and enforcement, therefore, need to focus on violations that most frequently cause personal injury. Based upon the latest understanding of bicyclists' and motorists' behaviors and collision data, this Plan recommends the creation of a DPT Bicycle Education Program that builds upon existing outreach efforts (Chapter 5) and renewed enforcement of a few high-frequency violations by both bicyclists and motorists.

Any increased enforcement effort, however, should also include bicycle safety training for all police officers to enhance their understanding of the proper operation of a bicycle in traffic and to ensure more equitable assessments at collision scenes⁴. Education should include crucial bicycle traffic knowledge such as: bicyclists passing stopped buses; double-parked vehicles; right-turning vehicles on the left; lane positioning techniques for bicyclists to establish their proper and legal right in a travel lane; stopping at red lights; and the necessity of avoiding the "door zone" (the area next to parked cars into which a car door can be abruptly opened). Bicyclists should also be educated regarding the conflicts of these and other cycling maneuvers. In issuing citations, police officers must be able to distinguish between a bicyclist legitimately passing on the right of slow cars, whether in a striped bicycle lane or a shared travel lane, and a bicyclist passing on the right when passing on the left is recommended. The City should continually work to understand which motorist and bicyclist violations are the most common sources of collisions and tailor enforcement efforts to discourage these behaviors. The City should also explore education and facility improvements that encourage motorists and bicyclists to share the road.

MOTORIST MOVING VIOLATIONS

Analysis of recent collision data indicates that a few common motorist behaviors contribute to the majority of automobile-bicycle collisions. The five most common reported behaviors of motorists that result in collisions with bicycles in the past five-plus years are shown in Table 6-1.

"Dooring" is the most frequent motorist violation. The second and third most common motorist violations involve: failure to yield to bicyclists who, by law, had the right-of-way. The fourth and fifth most frequent violations are unsafe traffic maneuvers that lead to collisions with bicyclists. As outlined in (Table 6-3) below, motorists were responsible for 62 percent of the ten most common collision categories and a majority (56 percent) of all bicycle-related collisions (Table 6-4) for the past five years, yet bicyclists suffered all of the injuries and fatalities. Approximately 0.5 percent of reported motorist-caused bicycle collisions involved drugs or alcohol (Table 6-4). Driving under the influence, therefore, was not a significant factor for the

⁴ The SFPD has improved their reporting of bicycle collision significantly over past years, yet there continues to be an under reporting of bicycle related collisions. The Statewide Integrated Traffic Records System (SWITRS) details 412 bicycle-related collisions for San Francisco in 1998, the Profile of Injury in San Francisco, published by the Department of Public Health (DPH) Injury Center (www.tf.org) shows that the San Francisco Fire Department (SFFD) Emergency Medical Services (EMS) Division responded to 441 incidents in which bicyclists were injured in 1998.

motorist-caused collisions. It should also be noted that motorist, while assigned fault, were not often cited for their violations.

Table 6-1
Bicycle/Automobile Collisions in San Francisco Where Motorist Were Most Frequently Assigned Fault [1998-2003]⁵

Ranking	Description	CVC Section	Number of Collisions ⁶	% of Total Collisions	Number Where Fault Not Assigned	# of Motorists Assigned Fault	% of Motorists Assigned Fault ⁷	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault
1	Opening Car Door when Unsafe	22517	194	10	3	191	100	0	0
2	Failure to Yield when Turning Left	21801.a	165	8	3	131	81	31	19
3	Yield to Approaching Traffic	21804.a	127	7	0	99	78	28	22
4	Unsafe Turn and/or without Signaling	22107	121	6	3	100	85	18	15
5	Unsafe Pass on Left	21750	66	3	0	51	77	15	23
TOTALS			673	35	9	572	84⁸	92	14⁹

The Right-Of-Way (ROW) violations, numbers 2, 3, and 4 in Table 6-1, could indicate that motorists are either not “seeing” cyclists lawfully operating as traffic or simply disregarding cyclists’ rights to share the road. The fifth most frequent violation, Unsafe Pass on Left, is a more blatant violation because in this case, the motorist is overtaking a bicyclist who often is clearly visible. Although it is encouraging that the SFPD is assigning fault to the motorists in these cases, they have not often cited the motorist for the violations. To re-enforce proper roadway behavior, it is recommended that violators be issued a citation.

⁵ This table uses SWITRS data from 01/01/1998 to 06/01/2003.

⁶ The collisions highlighted above represent, by far, the most frequent primary collision causes where motorists were assigned responsibility for a large majority of the incidents. These collisions resulted in some seriously injured cyclists and one cyclist fatality.

⁷ These percentages were calculated after the number of collisions for which no fault was assigned has been subtracted.

⁸ This represents the percentage of collisions from these five categories only (Table 6-1).

⁹ This represents the percentage of collisions from these five categories only (Table 6-1).

BICYCLIST MOVING VIOLATIONS

Bicyclists were assigned fault a large majority of the time for some violations: failure to stop at the limit line for red lights, failure to stop at the limit line for STOP signs, and wrong side of roadway (Table 6-2). While motorists were assigned fault more than 77 percent of the time in five of their most common violation categories, bicyclists were assigned fault for about 66 percent of the time in four of their most common collision categories. Motorists and bicyclists were assigned fault about the same percentage of the time for Unsafe Speed (Table 6-2).

Since Red light running is the most frequent primary collision factor for which bicyclists were assigned fault, it is the one bicyclists behavior being recommended for targeted enforcement. The size (and geometry) of some San Francisco intersections combined with relatively low cycling speeds, however, sometimes contributes to bicyclists not being able to “clear” an intersection before the signal changes to red. In this situation, the cyclist has a right to clear the intersection with oncoming traffic legally required to wait. Police should not ticket bicyclists for red light running in this scenario.

Curtailling red light running is important: the City should combine enforcement with roadway improvements and bicycle traffic education to achieve improved safety for cyclists. For example, roadway upgrades, such as bicycle boxes at intersections and “sharrows” for narrow lanes, are potential solutions for proper cyclist lane positioning (see Appendix A: Supplemental Design Guidelines for more information on these treatments). Bicycle safety education for both cyclists and police officers should include lessons on how to distinguish between a bicyclist legitimately passing slow cars, whether in a striped bicycle lane or not, and that of a bicycle passing on the right when he/she should pass on the left. These latter situations include: passing a stopped bus, passing a double-parked vehicle, and passing a right-turning vehicle.

Table 6-2
Bicycle/Automobile Collisions in San Francisco Where
Bicyclists Were Most Frequently Assigned Fault [1998-2003]¹⁰

Ranking	Description	CVC Section	Number of Collisions ¹¹	% of 5-Year Total	No Fault Assigned ¹¹	# of Motorists Assigned Fault	% of Motorists Assigned Fault ¹²	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault
1	Failure to Stop at limit line on Red	21453.a	181	9	5	63	36	118	67
2	Unsafe Speed ¹³	22350	174	9	1	81	47	92	53
3	Wrong Side of Roadway	21650	129	7	4	9	7	116	92
4	Failure to Stop at STOP sign Limit Line	22450	108	6	3	29	28	76	72
5	Passing on Right when Unsafe	22755	52	3	1	3	6	48	94
TOTALS			644	33	9	185	29¹⁴	450	70¹⁵

Table 6-3
Summary: Most Frequent Bicycle-Related Collisions (Based on
1950 total collisions [1998-2003]¹⁷)

# Motorists responsible for Ten Most Frequent Collisions	792
# Bicyclists Responsible for Ten Most Frequent Collisions	494
Ten Most Frequent Collisions Total	1286
% Motorists Responsible for Ten Most Frequent Collisions	62%
% Bicyclists Responsible in Ten Most Frequent Collisions	38%
Top Ten Collisions as % of All Collisions ['98-'03]	66%

¹⁰ This table uses SWITRS data from 01/01/1998 to 06/01/2003.

¹¹ The collisions highlighted above represent, by far, the most frequent primary collision causes where motorists were assigned responsibility for a large majority of the incidents. These collisions resulted in some seriously injured cyclists and one cyclist fatality.

¹¹ The number of collision reports that did not assign fault to either party.

¹² These percentages were calculated after the number of collisions for which no fault was assigned has been subtracted.

¹³ Both bicyclists and motorists were assigned similar percentages of fault for this violation.

¹⁴ This represents the total percentage of collisions from these five categories only (Table 6-2).

¹⁵ This represents the total percentage of collisions from these five categories only (Table 6-2).

¹⁷ This table uses SWITRS data from 01/01/1998 to 06/01/2003.

ENFORCEMENT AND SAFETY ACTION FRAMEWORK

MOVING VIOLATIONS

- Action 6.1** Place a high priority on SFPD enforcement of both bicyclist and motorist violations that most frequently injure cyclists.
- Action 6.2** Develop a SFPD “fix-it ticket” program, in collaboration with the DPT, for bicycle equipment violations.
- Action 6.3** Develop a method at the SFPD to systematically share non-collision bicyclist citations with DPT Bicycle Program.
- Action 6.4** Develop and implement, in collaboration with the SFPD, a DPT bicycle-safety traffic school curriculum as an option for those cited for moving violations.

An active campaign to involve the SFPD in enforcement of traffic safety laws directly affecting bicyclists should be carried out by the DPT Bicycle Program. A task force with the SFPD and DPT should be set up to develop a priority of enforcement infractions for both motorists and bicyclists. Priority for issuing citations should be given to the motorist violations identified above that most frequently cause collisions with bicyclists.

When cited for riding without lights and/or reflectors, cyclists should have the option to avoid a fine if they present evidence of properly equipping their bicycle within a reasonable time period. Such a “fix-it ticket” policy already exists for motor vehicles not equipped with the proper safety equipment and those not operating properly. This policy could also address the enforcement of other bicycle safety violations, such as properly operating bicycles and helmets on child bicyclists.

Citations issued for moving violations are bicycle-safety education opportunities. While proactive measures are best, classes to correct errant roadway behavior should be developed by DPT and offered as traffic school using best practices from other California communities with similar programs already in place. San Francisco’s curriculum should focus primarily on cycling in traffic skills, share the road concepts, and rights and responsibilities of both bicyclist and the motorist. As an alternative to a fine for a bicycle-related violation, offenders should be given the option of enrolling in a traffic school program with an emphasis on bicycle issues. Such a program could also be an option for non-bicycle related traffic infractions.

BICYCLES PASSING ON THE RIGHT

- Action 6.5** Request that the California Bicycle Coalition work to change California Vehicle Code (CVC) 21754 (Passing on the right) so that it applies to bicycles.

The 1997 Plan recommends that the City ask the state legislature to correct an apparent oversight in CVC 21754 which allows passing on the right under certain circumstances:

The driver of a motor vehicle may overtake and pass to the right of another vehicle only under the following conditions: (a) When the vehicle overtaken is making or about to make a left turn. (b) Upon a highway within a business or residence district with unobstructed pavement of sufficient width for two or more lines of moving vehicles in the direction of travel. (c) Upon any highway outside of a business or residence district with unobstructed pavement of sufficient width and clearly marked for two or more lines of moving traffic in the direction of travel. (d) Upon a one-way street. (e) Upon a highway divided into two roadways where traffic is restricted to one direction upon each of such roadways.

The provisions of this section shall not relieve the driver of a slow moving vehicle from the duty to drive as closely as practicable to the right hand edge of the roadway.

Since CVC 21754 allows motor vehicle to pass on the right of left-turning vehicles, when there is room for at least two lines of moving traffic in the direction of travel, or on a one-way street or on divided highway, it seems entirely within the spirit of the Vehicle Code for a bicyclist to overtake a motorist on the right within a lane wide enough to accommodate a line of moving bicycles. This would clearly be the case where there is a bicycle lane or shoulder; in other places, it depends on the width and condition of the lane and on traffic speed and volume.

There is a difficulty, however, with the letter of the law: CVC 21754 refers only to *motor* vehicles, not to vehicles in general, and is therefore not made applicable to bicycles by '21200. This seems to be an oversight on the Legislature's part, since if construed literally, '21754 would require bicyclists to pass even left-turning motorists on the left. Note that Action 6.5 does **not** recommend unrestricted passing on the right by bicyclists.

Since this is a statewide issue, it would be more properly initiated by the California Bicycle Coalition.

BLOCKING OF BICYCLE LANES

- | | |
|-------------------|---|
| Action 6.6 | Clarify sections of the San Francisco Traffic Code that pertain to double parking in bicycle lanes and increase parking enforcement and fines for this violation. |
| Action 6.7 | Post “no parking in bike lane” signs along bicycle lanes where double parking occurs |
| Action 6.8 | Increase the enforcement of the prohibition of operating motorcycles in bike lanes. |

While enforcement of double parking in bicycle lanes has improved since 1997, automobiles are still blocking the free movement of cyclists.

As a result of the 1997 Plan, a DPT Parking Control Officer (PCO) has been assigned to bicycle lane duty during the morning peak period. DPT has also actively identified and re-designated some curb zones in areas where double parking in bicycle lanes was a problem (such as Valencia and Market Streets). This measure mitigated some of the double parking by providing more short-term parking through colored curb short-term parking zones. This measure should be expanded. A thorough analysis of the PCO enforcement beat structure, double parking violation locations, and land use data should be undertaken by the DPT to improve its enforcement and to create additional mitigation measures (as specified above) for double parking. As staff resources permit, a team of PCOs should be assigned to patrol bike lanes to cite double parked vehicles at all times of day, with a particular focus on morning and evening peak periods.

The San Francisco Traffic Code (T.C.) should be amended accordingly and fines for double parking in bicycle lanes should be reevaluated. Note that while **TC SEC. 38.N. PARKING IN BICYCLE LANES PROHIBITED; FINES** states that “no person shall block any portion of a marked bicycle lane with his or her vehicle on weekdays from the hours of 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. Any person violating this Section shall be subject to a fine of \$100,” a motorist who double parks in a bike lane at other times can still be cited for general double parking.

CITY DEPARTMENT OUTREACH ON BICYCLE ENFORCEMENT ISSUES

A variety of City departments have influence over the proper enforcement, acceptance and management of bicycling. In order for these departments to more effectively and judiciously manage bicyclists' behavior and collect bicycle-related traffic and collision data, additional action is required by the City.

SAN FRANCISCO POLICE DEPARTMENT

Action 6.9 Develop a DPT bicycle-safety curriculum for all SFPD police officers that focuses on the rights and responsibilities of bicycle traffic and techniques required for safe and legal sharing of the roadway.

Action 6.10 Increase SFPD and DPT bicycle-mounted patrols.

The SFPD has made progress in addressing bicycle issues in the City¹⁸. Building upon this success, the DPT should provide bicycle traffic education to police officers focusing on the rights and responsibilities of cyclists and the practice of proper bicycle positioning techniques in traffic. The curriculum and materials for this education effort should draw from relevant sources such as the League of American Cyclists, the CVC, and the T.C.

Bicycle traffic education should be integrated into trainings for all SFPD police officers. In addition to developing awareness of the challenges of maneuvering a bicycle in traffic, a bicycle-

¹⁸ During 1996 and 1997 there was an under-reporting of bicycle-related collisions to the State by the SFPD. This under reporting has been addressed, however it has created a two year gap in bicycle SWITRS data for San Francisco.

safety training course should provide a list of guidelines to assist with bicycle-related collision reports: this helps ensure valuable documentation of information for public health studies regarding injury prevention. The bicycle safety education training should be administered by a certified instructor as opposed to simply showing officers educational videos. Support from the Chief of Police is essential and a meeting between the Chief of Police, the DPT Executive Director, and bicycle-mounted police is recommended as a first step.

Consistent with the City's Transit First Policy, the beat structure for the DPT Enforcement Division should be restructured to better serve transit, pedestrians, and bicyclists. Individual beats should incorporate transit and bicycle corridors rather than using such corridors as divisions between beats. For example, it would be preferable to include both sides of a section of Market Street in one beat, rather than use this section of Market Street as the boundary of two beats. With Market Street being the boundary, each direction of the street falls into a separate beat.

Since they have to review cases involving conflicts and collisions between motorists and bicyclists, the District Attorney's Office staff should be included in bicycle-safety training. Such training could be integrated with the police trainings or with workshops offered at other City departments as proposed in Chapter 5.

Bicycle-mounted police officers are more sensitive to bicyclists' rights and bicycle safety issues due to their increased understanding of the physical characteristics of bicycles, the relationship of bicyclists to motorists in a traffic situation, and the challenges of bicycle operation in an urban environment. As police departments have learned throughout the country, bicycle patrols are very effective in dealing with crimes that take place where police cars cannot go, or where they cannot go without being noticed.

While patrol car beats and patrol car back-ups will always be required, the SFPD should evaluate the potential of expanding bicycle patrols into more neighborhoods as well as into park and downtown settings.

The City should encourage contributions from police officers to neighborhood and bicycling publications to present their perspectives on bicycling issues to motorists and cyclists alike.

DEPARTMENT OF PUBLIC HEALTH AND EMERGENCY SERVICES AGENCIES

- | | |
|--------------------|--|
| Action 6.11 | Develop a system for hospitals, emergency rooms, and clinics to report all instances of bicycle injury to the SFPD and to the DPT Bicycle Program Manager. |
| Action 6.12 | Implement a system to allow cyclists to report collisions directly to the Bicycle Program website. |
| Action 6.13 | Inform cyclists that they are legally entitled to file a collision report when one is not initiated by the police. |

The collision data presented in this chapter, while useful in identifying the most crucial roadway behaviors that lead to bicyclist injuries, does not include the many unreported bicycle collisions believed to occur in San Francisco. To better understand the current state of cycling conditions and best improve bicyclists' safety, this Plan recommends the injury/collisions reporting actions 6.11 through 6.13. The information gathered from these actions will help improve our understanding of patterns and causes of injuries and assist Bicycle Program injury prevention and education efforts.

For the last several years, the San Francisco Department of Public Health has been working on an injury data linkage project using hospital admission data. Currently, San Francisco General Hospital (SFGH) is not obligated to report bicycle injuries to the SFPD. This is left up to the injured parties. EMS (ambulance services) is supposed to report bicycle injuries, but many are not reported. Comparing police collision reports with SFGH emergency room visits or hospital admissions shows that approximately 20 percent of pedestrian injuries (caused by a collision with a motor vehicle) did not show up in police collision reports in 2000 and 2001. The rate for bicycle injuries is probably similarly under-reported¹⁶.

The City should work to educate law enforcement officers and bicyclists about bicyclists' legal right to file a police report about collisions or threatening behavior by motorists. It is not mandatory to report a bicycle/automobile collision to the police. It is only mandatory if an assault is suspected. In addition, there is an issue of breach of confidentiality if collision data is reported without the patient's consent. Therefore, improved injury reporting and coordination between departments is necessary. Collecting this data is also important because communities seeking funding for education or enforcement activities for bicycle safety have to use EMS, emergency room, or hospital discharge data to show seriousness and number of bicycle and/or pedestrian crashes in addition to "reportable" ones.

MUNI INCIDENTS REPORTS

Action 6.14 Develop a standardized procedure for reporting San Francisco Municipal Railway (Muni) bicycle-related incidents and make this information more transparently available to the Bicycle Program.

To maintain a relevant bicycle-safety and education program, it is important to have the most accurate data available on bicycling conditions. Since police reports do not have a standardized method for reporting transit/bicycle collisions, finding data for these incidents is time consuming and impedes DPT's bicycle safety efforts. The police place transit/bicycle collision data in ambiguous categories such as 'Other' and 'Other Bus' which could just as likely be a private bus, an airport shuttle, a taxi, or a trailer. For example, when DPT queried several different category combinations from 3/31/1998 to 6/01/2003 in search of transit/bicycle collisions, individual police reports had to be pulled and reviewed to determine how many

¹⁶ While the SWITRS details 412 bicycle-related collisions for San Francisco in 1998, the Profile of Injury in San Francisco, published by the Department of Public Health Injury Center (www.tf.org) shows that the San Francisco Fire Department EMS Division responded to 441 incidents in which bicyclists were injured in 1998. Anecdotal evidence comes from collisions or near-misses that resulted in very minor or no injury, but were still caused by some of the same unsafe roadway behaviors outlined in this chapter.

collisions (approximately 50% of those analyzed or 33 collisions) involved Muni and one additional collision involved Golden Gate Transit. This data, especially when combined with other sources, helps DPT staff with facilities upgrades and bicycle-safety education. SFPD and transit agencies, therefore, should make standardized collision and incidents data more transparently available to DPT staff.

Muni currently tracks collisions (and other incidents) in a separate, internal database, the TransitSafe Incident database. This database tracks all incidents that cause delay to Muni vehicles. All Muni/bicycle collisions could be queried and tracked within this database, if the appropriate query attributes were added. In its current format, this database is not very useful in analyzing conflicts between bicyclists and Muni vehicles. If this database were to be improved, it would be an invaluable resource for analyzing and thereby improving bicycle safety in San Francisco. This database would be able to track police reported collisions, and bicycle/Muni conflicts that currently go unreported. Every effort within the MTA should be made to improve Muni's TransitSafe Incident reporting to make it a more a useful tool for improving bicyclist safety. Improvements to this reporting database would also benefit other road users, including pedestrians and motorists.

Table 6-4
Summary: Frequency Distribution of all Reported Bicycle-Related Collisions
 (Based on 1950 total collisions [1998-2003]²⁰)

Description	CVC Section	Number of Collisions ¹⁷	No Fault Assigned ¹⁸	# of Motorists Assigned Fault	% of Motorists Assigned Fault ¹⁹	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault
Opening Car Door when Unsafe	22517	194	3	191	100	0	0
Stop at limit line on Red	21453.a	181	5	63	36	118	67
Unsafe Speed ²⁰	22350	174	1	81	47	92	53
Failure to Yield when Turning Left	21801.a	165	3	131	81	31	19
Wrong Side of Roadway	21650 21650.1	129	4	9	7	116	93
Yield to Approaching Traffic	21804.a	127	0	99	78	28	22
Unsafe Turn and/or without Signaling	22107	121	3	100	85	18	15
Failure to Stop at STOP sign Limit Line	22450	108	3	29	28	76	72
Various Descriptions Given ²¹	Not Cited	88	11	38	50	39	51
Unsafe Pass on Left	21750	66	0	51	77	15	23
Unsafe Lane Change	21658.a	63	0	34	54	29	46

²⁰ SWITRS data from 01/01/1998 to 06/01/2003

¹⁷ The collisions highlighted above represent, by far, the most frequent primary collision causes where motorists were assigned responsibility for a large majority of the incidents. These collisions resulted in some seriously injured cyclists and one cyclist fatality.

¹⁸ The number of collision reports where fault was indicated.

¹⁹ These percentages were calculated after the number of collisions for which no fault was assigned has been subtracted.

²⁰ While motorists were assigned fault a similar percentage of the time for Unsafe Speed, they did not experience the frequency of injury experienced by bicyclists in these collisions.

²¹ Since so many collisions do not have a CVC violation cited, it is difficult to analyze these collisions in a meaningful way. It indicates a need to improve police reportage at bicycle collision scenes.

Description	CVC Section	Number of Collisions ²²	No Fault Assigned ²³	# of Motorists Assigned Fault	% of Motorists Assigned Fault ²⁴	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault
Passing on Right When Unsafe	22755	52	1	3	6	48	94
Starting or Backing when Unsafe	22106	51	0	43	84	8	16
Failure to Yield when Entering Highway	21802.a	41	1	29	73	11	28
Failure to Yield to Pedestrian in Crosswalk	21950.a	38	2	12	33	15	42
Following Too Closely	21703	26	0	12	46	14	54
Failure to yield ROW at Intersection	21800	26	0	14	54	12	46
Driving Under the Influence	23152.a	26	0	9	35	17	65
Designated Traffic Direction	21657	25	1	11	46	13	54
Bicycle Operation on Roadway	21202	23	3	10	50	7	35
Proceed at Green Light but Yield to Pedestrians/ Vehicles Lawfully in Intersection	21451.a	23	0	11	48	10	43
Driving on Sidewalk	21663	18	0	0	0	18	100
Improper Position for a Right-Turn at Intersection	22100.a	17	0	15	88	2	12

²² The collisions highlighted above represent, by far, the most frequent primary collision causes where motorists were assigned responsibility for a large majority of the incidents. These collisions resulted in some seriously injured cyclists and one cyclist fatality.

²³ The number of collision reports where fault was indicated.

²⁴ These percentages were calculated after the number of collisions for which no fault was assigned has been subtracted.

6. ENFORCEMENT AND SAFETY

Description	CVC Section	Number of Collisions ²⁵	No Fault Assigned ²⁶	# of Motorists Assigned Fault	% of Motorists Assigned Fault ²⁷	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault
Pedestrian ROW in Crosswalk	21950.b	15	0	9	60	5	33
Laws Applicable to Bicycle Use	21200.a	13	0	6 ²⁸	46	6	46
Improper Position for a Left-Turn at Intersection	22100.b	13	0	2	15	11	85
Passing on Right	21754	12	1	6	55	5	46
Failure to Yield ROW at Left or U-Turn	21801	12	1	5	46	5	46
Stop at Limit Line of Circular Red Light	21453.b	12	0	4	33	8	67
Failure to Obey Traffic Signal for Turn at Intersection	22101	11	0	5	46	6	55
Illegal U-Turn in Business District	22102	11	0	5	46	6	55
Failure to obey Traffic Signal	21461	10	0	2	20	7	70
Pedestrian Signal Violation	21456	9	0	5	56	4	44
Crossing Double Yellow Line	21460	9	0	6	67	3	33
Motor Vehicle Turning Unsafely Into Bicycle Lane	21717	8	0	3	38	5	63

²⁵ The collisions highlighted above represent, by far, the most frequent primary collision causes where motorists were assigned responsibility for a large majority of the incidents. These collisions resulted in some seriously injured cyclists and one cyclist fatality.

²⁶ The number of collision reports where fault was indicated.

²⁷ These percentages were calculated after the number of collisions for which no fault was assigned has been subtracted.

²⁸ Primary CVC collision factors and fault assignments can be confusing in some collision reports. In this category, for example, it appears that drivers were sometimes assigned fault, but the primary collision factor cites a CVC violation that only applies to bicycles. The same reports from this category also appear to cite an Under the Influence code for bicyclists even though the Has Not Been Drinking (HNBD) box was checked. It is understood that some collision scenes will be ambiguous and chaotic, but this Plan recommends that DPT and SFPD work together to improve reporting the procedure at bicycle collision sites.

Description	CVC Section	Number of Collisions ²⁹	No Fault Assigned ³⁰	# of Motorists Assigned Fault	% of Motorists Assigned Fault ³¹	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault
Circular Green or Green Arrow	21451	5	0	1	20	4	80
Bicycle Equipment Requirements	21201	3	0	2	67	1	33
Permitted Movements from Bicycle Lanes	21208	3	0	1	33	2	67
Failure to Yield at Flashing Light	21457	3	0	1	33	2	67
Failure to Yield ROW Upon Entering Road	21804	3	2	1	100	0	0
Motorized Vehicle Illegally Operated in Bike Lane	21209	2	0	2	100	0	0
Illegal Operation on Divided Highway	21651	2	0	1	50	1	50
Improper Lane and Unsafe Speed	21655	2	0	1	50	1	50
Unsafe Passing on Left/Obstructed View	21752	2	0	1	50	1	50
Illegal U-Turn in Residence District	22103	2	0	2	100	0	0
Circular Yellow or Yellow Arrow	21452	1	0	0	0	1	100
Failure of Slow Moving Vehicles to Turn Out	21656	1	0	0	0	1	100
Tailgating	21704	1	0	0	0	1	100

²⁹ The collisions highlighted above represent, by far, the most frequent primary collision causes where motorists were assigned responsibility for a large majority of the incidents. These collisions resulted in some seriously injured cyclists and one cyclist fatality.

³⁰ The number of collision reports where fault was indicated.

³¹ These percentages were calculated after the number of collisions for which no fault was assigned has been subtracted.

6. ENFORCEMENT AND SAFETY

Description	CVC Section	Number of Collisions ³²	No Fault Assigned ³³	# of Motorists Assigned Fault	% of Motorists Assigned Fault ³⁴	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault
Failure to Yield ROW at STOP Sign	21802	1	0	1	100	0	0
Failure to Yield ROW at Yield Sign	21803	1	0	1	100	0	0
Failure to Yield to Emergency Vehicle	21806	1	0	0	0	1	100
TOTALS		1950	45	1068	56	823	43

³² The collisions highlighted above represent, by far, the most frequent primary collision causes where motorists were assigned responsibility for a large majority of the incidents. These collisions resulted in some seriously injured cyclists and one cyclist fatality.

³³ The number of collision reports where fault was indicated.

³⁴ These percentages were calculated after the number of collisions for which no fault was assigned has been subtracted.

7. PROMOTION

PROMOTION GOALS AND OBJECTIVES

Goal:

Promote Safe Bicycling and Safe Bicycling Practices.

Objectives:

- Through community partnerships, identify funding, develop, and implement bicycle media campaigns and promotional materials to promote bicycling as a safe, healthy, cost-effective, environmentally beneficial transportation choice; and,
- Target promotional materials to San Francisco's diverse population groups.

RECOMMENDED PROMOTION ACTIONS

City staff should prioritize the following policies and actions in order to implement the goals for improved promotion of bicycling in San Francisco:

Action 7.1

Promote the benefits of the Bicycle Route Network facilities to diverse age, income, and ethnic populations.

Action 7.2

Formalize bicycle education and promotion responsibilities and develop partnership agreements between the Department of Parking and Traffic (DPT) Bicycle Program; the Department of the Environment (SF Environment); the Department of Public Health (DPH); and other City agencies.

Action 7.3

Expand bicycle promotion and incentive programs for City employees to serve as a model program for other San Francisco employers.

Action 7.4

Include, where appropriate, telephone and web-based contact information for the Metropolitan Transportation Commission (MTC)'s "511" program on relevant DPT Bicycle Program materials.

Action 7.5

Encourage and promote bicycle related businesses within San Francisco.

INTRODUCTION

The continued development of new, improved, safe, and attractive bicycle facilities may prove to be the most effective means of increasing bicycle use in San Francisco. However, promotional strategies should also be pursued to enhance awareness of the benefits of bicycling for commute, shopping and recreational purposes, and to encourage safe bicycling practices.

The 1997 Bicycle Plan included a presentation of focused research on regional and local bicycle promotion programs existing at that time. The findings of this research included:

- the development of bicycle commute promotion programs under the umbrella of transportation demand management programs is limited by employers' concerns for employee safety and employer liability;
- the success rate of City and employer sponsored bicycle promotion programs is difficult to assess due to the fact that information on bicycle commuters before and after program implementation is not readily available; and,
- bicycle commuting is generally overlooked as an automobile trip-reduction strategy.

Since this research was completed, bicycle promotion has evolved in San Francisco with multiple city agencies, non-governmental organizations, and employers expanding their promotion efforts. Before the bicycle will be seriously considered as a transportation choice by large numbers of commuters; the availability, feasibility, and benefits of bicycle commuting must be widely known. Many people are unaware of the opportunities that bicycle commuting can provide. Several strategies for promoting bicycle use for commuting and other purposes are discussed below and recommendations are presented for the continued development and improvement of each strategy.

It is important to recognize that there is substantial overlap between bicycle education, as presented in Chapter 5 of this plan, and bicycle promotion as discussed in this chapter. The primary distinction is that bicycle promotion focuses on appealing messages and incentives to attract people to the benefits of bicycling. Because of the need to diversify transportation options in the City and to attract new riders to the streets and pathways of San Francisco's growing Bicycle Route Network, it is appropriate to dedicate City resources to actively promote bicycling to new markets. Once new markets are identified through promotional activities, educational efforts are then more effectively employed to turn new bicycle riders into safe and committed bicyclists. Direct overlap between recommended promotional programs and educational programs is indicated in the chapter text.

Promotional activities should be targeted, utilizing the demographic information generated by the Metropolitan Planning Commission (MTC)'s Commuter Profile¹ to reach the expressed latent demand. However, promotional activities reaching out to new audiences and segments of San Francisco's diverse community should be undertaken. Building and assisting the San

¹ Rides Commuter Profile 2003 <http://rideshare.511.org/research/commuterprofile2003.asp>

Francisco Bicycle Coalition (SFBC)'s outreach efforts, like the SFBC's Women and Bikes Profile², could assist in reaching many of the diverse San Francisco communities.

PROMOTION OF BICYCLE ROUTE NETWORK

Action 7.1 Promote the benefits of the Bicycle Route Network facilities to diverse age, income, and ethnic populations.

The Bicycle Route Network should be promoted to make potential users more aware of citywide bicycle trip potential between multiple neighborhoods, shopping districts, employment centers and other origins and destinations. Specific strategies for promoting the Bicycle Route Network include:

- distribute complementary printed Bicycle Route Network maps through appropriate channels, including employer commute programs, bicycle related events, bicycle shops, city-sponsored events, and other sources;
- develop a web-based bicycle trip planning system;
- post the Bicycle Route Network maps in high-visibility public locations such as transit stops, bus shelters, and other significant locations such as libraries, college campuses, and tourist destinations near the Bicycle Route Network; and
- nominate San Francisco for official recognitions such as the League of American Bicyclists (LAB) Bicycle Friendly Community award.

As the City continues to refine the Bicycle Route Network as outlined in Chapter 2 of this Plan, new bicycle facilities and major bicycle facility improvements should be promoted to encourage their proper use. DPT Bicycle Program staff should seek opportunities to partner with local nonprofit organizations, neighborhood groups, and other City agencies to educate City officials,

City staff, local employers, and other citizens aware of the benefits of these new facilities. An explanation of the benefits of each bicycle facility should be developed as part of the project development and should be used to promote both its implementation and use.



San Francisco DPT ribbon cutting for the Duboce Pathway.

² http://www.sfbike.org/download/tubetimes/tt_040203.pdf

DEVELOP CITY-SPONSORED BICYCLE PROMOTION

Action 7.2

Formalize bicycle education and promotion responsibilities and develop partnership agreements between the Department of Parking and Traffic (DPT) Bicycle Program; the Department of the Environment (SF Environment); the Department of Public Health (DPH); and other City agencies.

DPT's Bicycle Program should serve as the coordinating agency for all City sponsored bicycle promotion efforts, and should be consulted by other City agencies regarding proposed bicycle promotion campaigns.

The DPT Bicycle Program should work cooperatively with the SF Environment, the DPH and the San Francisco Municipal Railway (Muni) on future promotion events by developing a task force to determine priorities and funding strategies. Prior "Bike to Work Day" and other events are examples of SF Environment's commitment to and excellence in event planning.



The San Francisco City Hall bike room provides secure bike parking and locker facilities for City staff.

Once the above described responsibility is determined by an interagency operating agreement, DPT and other City agencies should work to promote a better understanding of the benefits of bicycling for utilitarian and recreational purposes. Environmental, health, and cost benefits are examples of areas in which promotional efforts could focus. The DPT Bicycle Program website should be updated to include features on the benefits of bicycling and should provide links to other City websites that promote the benefits of bicycle use.

The above discussion of agency responsibility and the City's role in promoting the benefits of bicycling to the general public is also discussed in detail in Chapter 5 - Education, under Actions 5.1 and 5.2.

CITY STAFF PROGRAMS AND POLICIES FOR BICYCLE USE

Action 7.3

Expand bicycle promotion and incentive programs for City employees to serve as a model program for other San Francisco employers.

There are a wide variety of potential strategies available to the City in order to promote increased bicycle use by City employees for both commute to work and on the job purposes.

The following specific programs should be implemented:

- City bicycle pool, similar to existing pool of City motor vehicles. The Bicycle Program Manager should work with the SF Environment's Clean Air Program Coordinator to acquire bicycles for this purpose. Bicycle parking facilities, helmets, safety vests, and training would be needed in addition to bicycles;
- Development of a reimbursement program for City employees' use of personal bicycles, similar to existing programs for reimbursement of personal vehicle mileage or use of a City CarShare vehicle;
- Development of a program to substitute fleet purchase of bicycles in lieu of City vehicle purchase for specific agencies and positions where bicycles could provide a viable means of job-related transportation; and,
- Development of specific campaign efforts to include bicycle promotion materials in City correspondence such as a special message from the Mayor's office, agency and department directors, or as an inclusion in City pay check distributions.

There is direct overlap with the discussion of City staff bicycle promotion in Chapter 5 - Education, under Action 5.7 and 5.8.

BICYCLE EVENTS

Themed events held in San Francisco often attract regional and sometimes even national attention and offer the City and other organizations an opportunity to reach many people with promotional messages. To make the most of the promotion potential of these events, messages should be targeted to likely audiences. Potential audiences include bicycle commuters, potential bicycle commuters, recreational bicyclists, and non-bicyclists.

"BIKE TO WORK DAY"

"Bike to Work Day" is an annual event celebrated in many municipalities across the country that encourages people to commute by bicycle. In San Francisco, participants enjoy complimentary coffee, treats, and receive a free "goodies" tote bags from one of many neighborhood "energizer stations" located throughout the City. Participants are also eligible for a drawing of prizes. In recent years, "Bike to Work Day" has been coordinated by SFBC with assistance from MTC and SF Environment.



San Francisco Mayor Gavin Newsom with SFBC staff, DPT staff and others during the 2004 Bike to Work Day.

Additional participation from appropriate City agencies including DPT, SF Environment, and DPH could serve to expand the scope, participation, and influence of this event. The involvement of the San Francisco Mayor and members of the Board of Supervisors has served

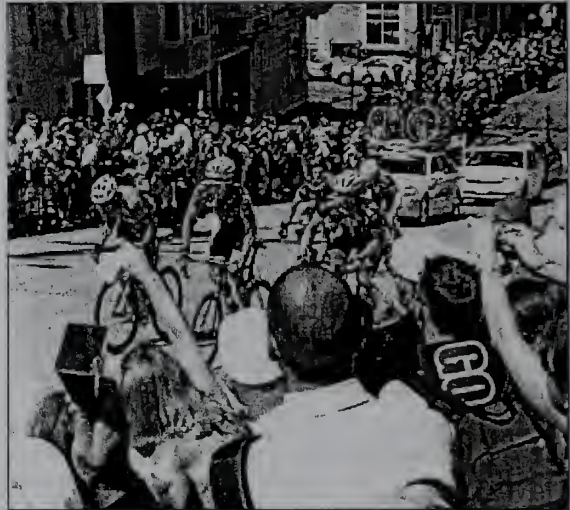
7. PROMOTION

to elevate the event's profile. The participation of greater numbers of City employees could serve to expand the scope of the event significantly.

This event is a clear opportunity for expanded promotional efforts related to bicycle commuting. Bike-to-Work Week, Car Free Day, and Earth Day are other existing events which could be expanded to encourage more participation.

BICYCLE RACING

San Francisco serves as host to an increasing number of recreational and competitive bicycle events, of an increasingly international stature. The San Francisco Grand Prix dwarfs all other events in terms of budget and popular interest. The spectator volumes at this event have increased each year that it has been held, beginning in 2001. Potential partnerships with race promoters or organizations (such as the Northern California/Nevada Cycling Association, www.ncnca.org) could serve to incorporate broader bicycle promotion into the theme of the event.



Scene from the San Francisco Grand Prix 2003

There are several other bicycle events held in or passing through San Francisco.

Among these are two AIDS fundraising bicycle rides, Giro di San Francisco, and the Go Greenbelt bicycle tour that circumnavigates the entire Bay to promote open space preservation. Although these events are smaller than the San Francisco Grand Prix, they do provide an opportunity for distributing safety and bicycle commuting promotional materials.

The SFBC and SF Environment have distributed bicycle promotional materials at past events and should work with other City agencies to expand their efforts.

BICYCLE INFORMATION RESOURCES: MTC 511 PROGRAM

Action 7.4

Include, where appropriate, telephone and web-based contact information for the Metropolitan Transportation Commission (MTC)'s "511" program on relevant DPT Bicycle Program materials.

The MTC 511 program is a "toll-free phone and Web service that consolidates Bay Area transportation-related information into a one-stop resource. This easy three-digit number provides up-to-the-minute information on traffic conditions and incidents, details on public

transportation routes and fares, instant carpool and vanpool referrals, bicycling information and more.”³

STREET FAIRS AND FESTIVALS

Other large events in San Francisco such as street fairs, the Festival d'Italia, the Cherry Blossom Festival, and July 4th fireworks are required to provide bicycle access with secure bicycle parking (see Chapter 3; page 3-16). As part of the event advertising, the best bicycle route to the event should be published along with the location of the bicycle parking. Street fairs and festivals are also potential distribution sites for bicycle promotion materials.

BICYCLE RELATED BUSINESSES

Action 7.5 Encourage and promote bicycle related businesses within San Francisco.

San Francisco has many bicycle related businesses that serve the community, the most visible of these being the San Francisco bicycle messengers. Promotional efforts encouraging bicycling in the City should include San Francisco’s bicycle messengers, particularly their laudable efforts of creating a volunteer disaster response team.⁴

Promotional material should also be developed to centralize information regarding pedicabs (bicycle taxis), bicycle rentals, bicycle shops, bicycle messenger services, and stores that are bicycle friendly (allowing cyclists to bring their bicycles inside, offering ‘shop by bike discounts’, providing secure bicycle parking, etc.) This material could serve many different bicycle users within the City, from the visiting tourist to the seasoned urban cyclist.

³ <http://www.511.org>

⁴ The Courier Disaster Response Team are bicycle messengers trained to respond in time of a large scale disaster, committed to transporting supplies and messages in time of need.

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8. GENERAL PLAN AMENDMENTS, ENVIRONMENTAL REVIEW, AND CITYWIDE COORDINATION

Goal:

Adopt Bicycle-Friendly Practices and Policies

Objective:

Integrate consideration of bicycle travel into all roadway planning, design, and construction.

RECOMMENDED GENERAL PLAN AMENDMENT ACTIONS

City staff should prioritize the following policies and actions and amend the San Francisco General Plan so that it provides a policy framework for improvement of bicycle facilities:

Action 8.1

Incorporate this Bicycle Plan in whole by reference into the General Plan and amend sections of the General Plan that are relevant to bicycling, including the Transportation Element and Downtown Area Plan, according to the goals of the Bicycle Plan.

Action 8.2

Adhere to the process for General Plan amendments as required for subsequent amendments and updates to the Bicycle Plan and Bicycle Route Network.

Action 8.3

Ensure that all current and proposed Area Plans' objectives and policies are consistent with the goals of the San Francisco Bicycle Plan. Whenever updates or revisions are considered to existing Area Plans, especially those that do not now contain sections on bicycling, these Area Plans should include sections on bicycling consistent with the goals of the Bicycle Plan. These current Area Plans include: Central Waterfront, Chinatown, Civic Center, Rincon Hill, and South of Market.

Action 8.4

Update the Planning Department's "Guidelines for Environmental Review: Transportation Impacts," to ensure adequate accommodation of bicycles.

Action 8.5

Ensure that non-automated traffic counts conducted as part of any City transportation or development study include: bicycle counts at the same locations where motor vehicles are counted; an inventory of existing bicycle parking within a two-block radius of the study site; and the project's impacts on any existing or proposed bikeways designated in the General Plan.

Action 8.6

Consult DPT regarding any proposed bicycle facilities, namely public agencies with jurisdictions or rights-of-way within the City and County of San Francisco.

INTRODUCTION

California law requires that a jurisdiction's General Plan address seven issues: land use, transportation, housing, conservation, open space, noise, and safety. In addition to these required elements, the San Francisco General Plan contains sections on commerce and industry, community facilities, urban design, and the arts. The General Plan also contains 10 Area Plans, which focus on specific geographic regions within the City. In 1995 the San Francisco Charter was amended to adopt the General Plan as the guiding law of the City, not just as an advisory document, and to require that any amendments to the General Plan be approved by the Board of Supervisors (BOS).

In conjunction with the completion and adoption of this Bicycle Plan, a number of amendments will be proposed to San Francisco's General Plan, particularly the Transportation Element and the Downtown Area Plan, each of which currently contain sections on bicycling, in order to achieve the goals of the San Francisco Bicycle Plan. These proposed amendments include specific mention of, and incorporation by reference, the Bicycle Plan as an adopted complimentary component of the city's General Plan. This chapter recommends that, as other Area Plans are updated, they include objectives and policies for bicycling, and that the "Planning Department's Guidelines for Environmental Review: Transportation Impacts" be amended. Finally, recommendations are made for amending the City's current Level Of Service (LOS) standards and methodologies to be more consistent with existing General Plan Objective 10, which calls for the City to "develop and employ methods of measuring the performance of the City's transportation system that respond to its multi-modal nature."

RECOMMENDED AMENDMENTS TO THE TRANSPORTATION ELEMENT OF THE GENERAL PLAN

Action 8.1 Incorporate this Bicycle Plan in whole by reference into the General Plan and amend sections of the General Plan that are relevant to bicycling, including the Transportation Element and Downtown Area Plan, according to the goals of the Bicycle Plan.

Action 8.2 Adhere to the process for General Plan amendments as required for subsequent amendments and updates to the Bicycle Plan and Bicycle Route Network.

The Transportation Element of the General Plan is composed of sections dealing with important components of the local and regional transportation system. Section 7 deals with Bicycle Transportation. The introduction to this section states:

The bicycle is a desirable alternative to the automobile as a means of urban transportation in San Francisco. It can successfully be used for most transportation needs, including commuting, shopping, errands, and recreation. Active encouragement of bicycle use as an alternative to automobile use, whenever possible, is essential in light of the continually increasing traffic congestion caused by motorized vehicles which aggravates air pollution, increases noise levels and consumes valuable urban space. The bicycle is a practical and economical transportation alternative which produces no emissions or noise. In addition, each bicycle user enjoys health benefits through increased physical activity.

To enable a large number of San Franciscans to use the bicycle as a transportation option, several significant needs must be met. The needs include, among others, safe and comfortable space on the roadway for bicyclists, a properly signed Bicycle Route Network that direct bicyclists to major destinations, safe and secure bicycle parking, and education of both the bicyclists and motorists about the safe sharing of the roadways.

The Transportation Element was last amended and adopted in 1995. This amendment process was concurrent with the 1997 Bicycle Plan and many of the 1997 Bicycle Plan's recommendations for changes to the Transportation Element were incorporated during the General Plan amendment process. However, these amendments did not include specific mention of, or reference to, the Bicycle Plan as an adopted complimentary component of the city's General Plan. Based upon the work of the 1997 Bicycle Plan, a map of the Bicycle Route Network was included and designated within the San Francisco General Plan Transportation Element. As changes to the network occur, periodic updates of the Bicycle Route Network within the San Francisco General Plan should occur.

RECOMMENDED AMENDMENTS TO OTHER AREA PLANS

Action 8.3

Ensure that all current and proposed Area Plans' objectives and policies are consistent with the goals of the San Francisco Bicycle Plan. Whenever updates or revisions are considered to existing Area Plans, especially those that do not now contain sections on bicycling, these Area Plans should include sections on bicycling consistent with the goals of the Bicycle Plan. These current Area Plans include: Central Waterfront, Chinatown, Civic Center, Rincon Hill, and South of Market.

While the Downtown Area Plan already contains a section that deals specifically with bicycling, several of the General Plan's Area Plans do not now address bicycling, or do not address it fully. When undertaking updates or revisions to existing Area Plans (including planning efforts meant to supplement or replace existing Area Plans, such as the Better Neighborhoods), or when adopting new Area Plans, the Planning Department should ensure that their goals and objectives are consistent with the goals and objectives of the San Francisco Bicycle Plan and include sections on bicycling as appropriate.

RECOMMENDED AMENDMENTS TO GUIDELINES FOR ENVIRONMENTAL REVIEW: TRANSPORTATION IMPACTS

Action 8.4 Update the Planning Department's "Guidelines for Environmental Review: Transportation Impacts," to ensure adequate accommodation of bicycles.

The "Guidelines for Environmental Review: Transportation Impacts," published by the Department of City Planning for consultants who are conducting transportation analyses for both Environmental Impact Reports and Negative Declarations, should be amended. The Guidelines were last updated in 2002 and cite the 1997 Bicycle Plan as a source. The Guidelines include Section E. Bicycle Impacts (shown below) in the Study Report Preparation Guidelines:

The existence of current or future bicycle facilities in the area should be identified from the San Francisco Bicycle Plan and by consultation with the Department of Parking and Traffic. The analysis should examine possible impacts on bicycle traffic on the streets in the vicinity of the project. This would include potential conflicts between auto, truck and bus traffic serving the project during loading and unloading, and potential conflicts due to turning movements across bicycle lanes or routes. Potential barriers or hazards to safe bicycle operations near the project should also be identified. Other conditions that may have a notable negative or positive impact on use, such as bicycle parking or the provision of shower facilities, should also be stated. Details regarding the location and access to any bicycle facilities included in the project should be described in the textual discussion and clearly shown on the site plan included in the background transportation report. The information provided needs to be sufficient to ascertain whether the proposed bicycle facilities would be secure and practical for bicyclists to use.

If sufficient bicycle traffic exists or is anticipated on a study area street, it may be necessary to include a quantitative analysis of the impacts using the methodology in the 2000 Highway Capacity Manual or some similar technique.

The Guidelines state that if "sufficient bicycle traffic exists or is anticipated on a study area street, it may be necessary to include a quantitative analysis of the impacts." The Guidelines should be updated to specifically define "sufficient bicycle traffic," using a quantifiable standard.

The Guidelines require that a Transportation Report be prepared if a proposed project has elements that have the potential to adversely affect bicycle safety or the adequacy of nearby bicycle facilities. The project description must include:

- Identification of the location, number and type of bicycle parking spaces to be provided;
- Illustration of all designated bicycle routes in the study area;
- Description of existing treatments for bicycles, and any proposed treatments for bicycle routes, as well as general characterization of the extent of bicycle usage;
- Comparison of the amount of parking to be provided for bicycles with Code requirements; and,

- o Identification and mitigation of any traffic impacts or conflicts of parking access with streets identified for full or partial priority for bicycles, and any potential conflicts affecting bicycle traffic flow.

Whenever on-site parking is proposed, sufficient details must be included to the extent possible in order to assess potential for conflicts with bicycles and sufficient details must be included to the extent possible in order to assess the quantity, locations, access, safe and secure character, and provisions for associated showers and lockers for all bicycle parking spaces whenever required or provided. The locations for garbage and recycling pick-up operations must be situated to minimize the potential for disruptions to bicycle circulation. Mitigation measures cited include provision of off-street bicycle storage pursuant to Section 155 of the City Planning Code, provision of secure bicycle facilities for project commuters and short-term visitors, which would, at a minimum, provide safe shelter for the number of spaces required in the project, and encouragement of bicycle use.

Action 8.5

Ensure that non-automated traffic counts conducted as part of any City transportation or development study include: bicycle counts at the same locations where motor vehicles are counted; an inventory of existing bicycle parking within a two-block radius of the study site; and the project's impacts on any existing or proposed bikeways designated in the General Plan.

The “Guidelines for Environmental Review: Transportation Impacts” should be amended to include the following items, which were recommend in the 1997 Bicycle Plan but were not incorporated into the Guidelines:

- o All traffic counts conducted as part of the study must include bicycle counts at the same locations where motor vehicles are counted;
- o An inventory of existing bicycle parking must be conducted within a two-block radius of the project site; and,
- o Mitigation measures should not include any action that would compromise bicycle travel such as the narrowing of a curb lane on any street, nor re-striping or widening to provide a double right-turn lane where the second lane is a shared through-right lane.

Proposed street changes result from new development – as well as parking modifications, or changes to the roadway configuration, such as the addition or elimination of turn lanes at a specific intersection. All proposed street changes are currently reviewed by DPT, including its Bicycle Program. The impacts of street changes are specifically addressed and recommendations are often made to improve conditions for cyclists and to ensure that cyclists’ experience is not degraded. All new developments requiring an EIR are reviewed by DPT. The EIR review includes the following items:

- o Consistency with the General Plan and Bicycle Plan;
- o Impact on the existing Bicycle Route Network; and,
- o Safety of bicycle operations are based on project conformity to accepted design standards and guidelines

COORDINATION WITH OTHER JURISDICTIONS WITHIN SAN FRANCISCO

Action 8.6 Consult DPT regarding any proposed bicycle facilities, namely public agencies with jurisdictions or rights-of-way within the City and County of San Francisco.

The DPT Bicycle Program meets as necessary with staff of other agencies that have jurisdiction within San Francisco to discuss proposed bicycle plans and facilities within San Francisco. These agencies include the Golden Gate National Recreation Area, the Presidio Trust, the California Department of Parks & Recreation, Caltrans, the Metropolitan Transportation Commission, the Golden Gate Bridge, Highway and Transportation District, the Association of Bay Area Governments, and the Bay Area Ridge Trail Council. Major projects discussed include the Bay Bridge West Span Bicycle Path, the Bay and Ridge Trails, the Presidio Bicycle Plan, and the Crissy Field Wetlands Restoration.

The DPT Bicycle Program, as the City's liaison to other agencies on San Francisco bicycle plans, projects and programs, will continue to meet with these agencies' staff members. The staff of these other agencies should include DPT Bicycle Program staff in all discussions and review of any San Francisco bicycle projects.

GLOSSARY

ACWS	Asphalt Concrete Wearing Surface
ABAG	Association of Bay Area Governments
BBATF	BART Bicycle Accessibility Task Force
BAAQMD	Bay Area Air Quality Management District
BAC	Bicycle Advisory Committee
BART	Bay Area Rapid Transit
BAFUL	Bicycles Allowed Full Use of Lane
BATA	Bay Area Toll Authority
BFU	Caltrans Bicycle Facilities Unit
BOS	Board of Supervisors
BTP	Bicycle Transportation Plan
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CTCDC	California Traffic Control Device Committee
CVC	California Vehicle Code
CMA	Congestion Management Agency
DPT	Department of Parking and Traffic
DPH	Department of Public Health
DPW	Department of Public Works
EMS	Emergency Medical Services Division
EIR	Environmental Impact Report
GGBHTD	Golden Gate Bridge Highway and Transportation District
GGNRA	Golden Gate National Recreation Area
GGT	Golden Gate Transit
GIS	Geographic Information System
HDM	Caltrans Highway Design Manual
HNBD	Has Not Been Drinking
ISCOTT	Interdepartmental Staff Committee on Traffic and Transportation
ISTEA	Inter-modal Surface Transportation Efficiency Act
ITS	Intelligent Transportation System
LAB	League of American Bicyclists
LOS	Level of Service
LRV	Light Rail Vehicle
MEA	Major Environmental Analysis
MMC	methyl methacrylate
MPO	Metropolitan Planning Organization
MTA	San Francisco Municipal Transportation Agency
MTA CAC	Municipal Transportation Agency Citizen's Advisory Council
MTC	Metropolitan Transportation Commission
MUTCD	Federal Manual of Uniform Traffic Control Devices
Muni	San Francisco Municipal Railway
OTS	Office of Traffic Safety
OC	Oversight Committee
PCO	Parking Control Officer

PJPB	Peninsula Joint Powers Board (Caltrain)
PMS	Pavement Management System
ROW	Right-Of-Way
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
SAR	Strategic Analysis Report
SCCC	Street Construction Coordination Center
SFBC	San Francisco Bicycle Coalition
SFCTA	San Francisco County Transportation Authority
SF Environment	Department of the Environment
SFFD	San Francisco Fire Department
SFGH	San Francisco General Hospital
SFPD	San Francisco Police Department
SFRA	San Francisco Redevelopment Agency
SFUSD	San Francisco Unified School District
Sharrow	Shared Lane Pavement Marking
SR2S	Safe Routes to School
STIP	State Transportation Improvement Program
SWITRS	Statewide Integrated Traffic Records System
TC	San Francisco Traffic Code
TDA	Transportation Development ACT
TEA-21	Transportation Equity Act of the 21st Century
TFCA	Transportation Fund for Clean Air
TWG	Technical Working Group

APPENDIX A. SUPPLEMENTAL DESIGN GUIDELINES



City of San Francisco Bicycle Plan Update: Supplemental Design Guidelines

September, 2003

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Introduction

The City of San Francisco has been working for the past decade to implement on-street bikeway projects in order to encourage cycling, improve safety, and improve the quality of bicycling so that it becomes an integral part of daily life. Because San Francisco is a completely built-out urban environment, almost all projects involve retrofitting existing streets and intersections. San Francisco has challenging topography, a high demand for on-street parking, extremely high volumes of transit and motor vehicle traffic, and many complex situations. When looking to implement bike lanes or other improvements on San Francisco's streets, the standard design manuals offer limited solutions for San Francisco.

The San Francisco Supplemental Design Guidelines are a compliment to the 2003 San Francisco Bicycle Plan Update. These design concepts are intended to supplement the bikeway design guidelines for typical bikeway situations provided in Caltrans Highway Design Manual (HDM) Chapter 1000, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, and the Manual of Uniform Traffic Control Devices (MUTCD) 2000, Part 9 Traffic Controls for Bicycle Facilities. These treatments draw upon creative solutions in use in other locations in California, other States, and European cities. These designs are conceptual at this stage, and must be reviewed further before being applied to actual situations. It should be noted that for several of the designs, more than one option is presented. In these cases, ultimately one preferred design should be selected. Strong design guidelines will allow the City of San Francisco to improve the quality of the bicycle network by applying the highest standard of bicycle safety, comfort, and convenience.

This document does not attempt to replace material covered within the HDM, AASHTO Guidelines, or MUTCD, but rather, to clarify local treatments of bicycle facility design. This document will be approved by the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) and represents the common interests and support of the City and County of San Francisco's departments and agencies. Caltrans HDM Chapter 1000, Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, and the Manual of Uniform Traffic Control Devices (MUTCD) should be referenced and the use of this document should be supplemental as the name implies.

As part of the Master Plan, the City will be applying the design solutions found in the Supplemental Design Guide to individual sites. These sites were selected as high priorities for improvements based on safety, connectivity, potential cycling usage, and popular support criteria. Once implemented, each site will be carefully monitored, at which time the City will assess the design and make recommendations regarding the its further application.

Clarifications on Terminology

"SHALL" or "MUST"	All language that is explicitly stated as such, is referenced within Caltran's HDM, MUTCD, AASHTO's Guide for The Development of Bicycle Facilities, or other traffic engineering manuals. The San Francisco Supplemental Design Guidelines conforms to these overriding documents.
"SHOULD"	All language that is suggestively stated as such, represents a "best practices" guideline that should be followed, but is still open for interpretation depending on a multiple of local factors including; topography, lane widths, vehicle speeds, collision history, etc. Suggestive guidelines can not conflict with these explicit standards.
"MAY"	All language that is conditionally stated as such, represents a guideline that could be followed in San Francisco. Conditional guidelines are dependant on multiple variables. Often times they should be coupled with a "before and after" study to determine their effectiveness. They can not conflict with explicit standards set forth in the HDM, MUTCD, or AASHTO's Guide for The Development of Bicycle Facilities.

1A. BIKE LANE DESIGNS: GUIDELINES

DESCRIPTION

BICYCLE LANE WIDTH

RECOMMENDED GUIDELINE:

Bike lanes alongside parking lanes shall be at least 5' wide. They may be widened to 6' if space is available and the parking lane has been widened to 9'. Bike lanes alongside curbs shall be at least 4' wide, with 3' minimum from gutter joint to the bike lane stripe. Curbside bike lanes should be 5' wide, and may be wider if necessary and space is available.

Bicycle lanes >5' alongside parking lanes may be desirable with one or more of the following conditions:

- Traffic volumes (including truck or bus volumes)/speeds are high
- Bicycle volumes are high
- Wider bike lane will not encourage illegal parking or driving in the bicycle lane to bypass congestion

Bike lanes are typically dashed from 100' in advance of intersections to the intersection in order to warn cyclists of impending conflicts and to allow motorists to travel across the bike lane to turn or merge as required in the California Vehicle Code. The dashed length may be of a shorter distance in special situations, such as short blocks.

MINIMUM STANDARD:

The minimum standard for bicycle lane width is established in Highway Design Manual Chapter 1000 as 4' in width. The minimum standard for bicycle lane width adjacent to parking is 5' in width.

PARKING LANE WIDTH

RECOMMENDED GUIDELINE:

The recommended guideline for parking lane width is 8'. Parking lanes may be of narrower width if specifically required for other modes, with preference to transit over motor vehicle traffic.

9' parking lane width is recommended where one or more of the following conditions exists (assuming space is available):

- Parking turnover is high (metered parking, commercial areas)
- Higher concentration of wide vehicles in parking lane (trucks, buses, etc)
- It is preferable to narrow travel lanes to encourage slower speed
- Widening the parking lane moves the bike lane away from the curb and keeps motorists near the middle of the road, increasing sight distances for traffic on cross-streets

MINIMUM STANDARD:

The minimum standard for parking lane width is 7'. A 7' parking lane width is acceptable with one or more of the following conditions:

- Low parking turnover (neighborhood streets)
- Uphill bike lane (slow cycling speeds)
- Space constraints do not allow for wider parking lane

TRAVEL LANE WIDTH

RECOMMENDED GUIDELINE:

Travel lanes adjacent to a bike lane should be 10' in width. In the absence of designated truck routes and/or high capacity transit lines, additional curb to curb width should be allocated according to the following priority: (1) bicycle and pedestrian circulation, (2) transit operations, and, (3) private vehicle operations.

Travel lanes should be greater than 10' when the following circumstances exist:

- Roadway is posted at greater than 30 mph
- Roadway is a transit (including MUNI) route
- Roadway is a designated truck route, with oversized vehicles common

1B. BIKE LANE DESIGNS FOR TWO-WAY STREETS

DETAILS

Bike Lane Markings All striping must be non-skid material.

Preferred marking material: Thermoplastic or other non-slick retroreflective material.

Bike Lane Stripe: 6" wide

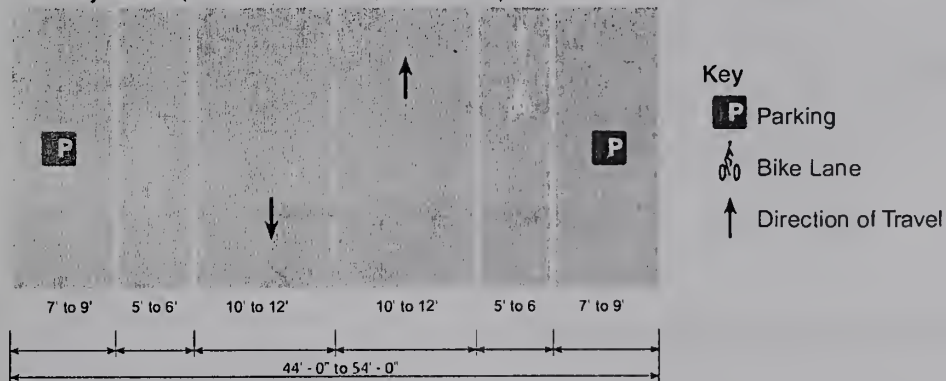
Parking Lane Stripe: 4" wide

Spacing Between Bike Stencils: Stencil spacing will be determined base on block length, parking turnover, land use, and other relevant factors.

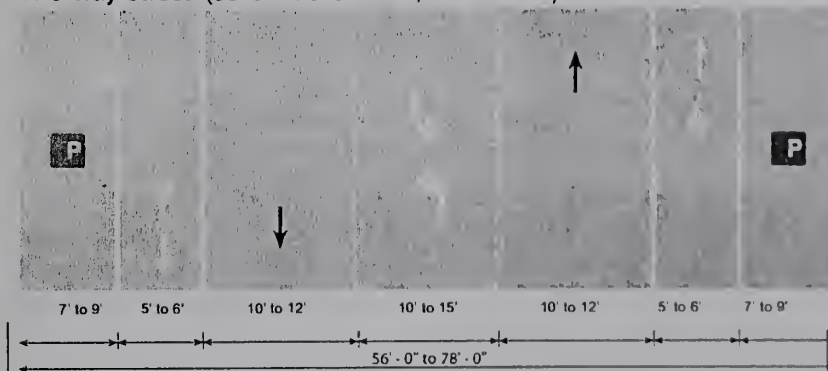
Optional Treatment: Colored lanes (dyed or thermoplastic) may be considered in addition to striping of bicycle lanes.

GRAPHIC

Two-Way Street (44'-0" - 54'-0" width, curb to curb)

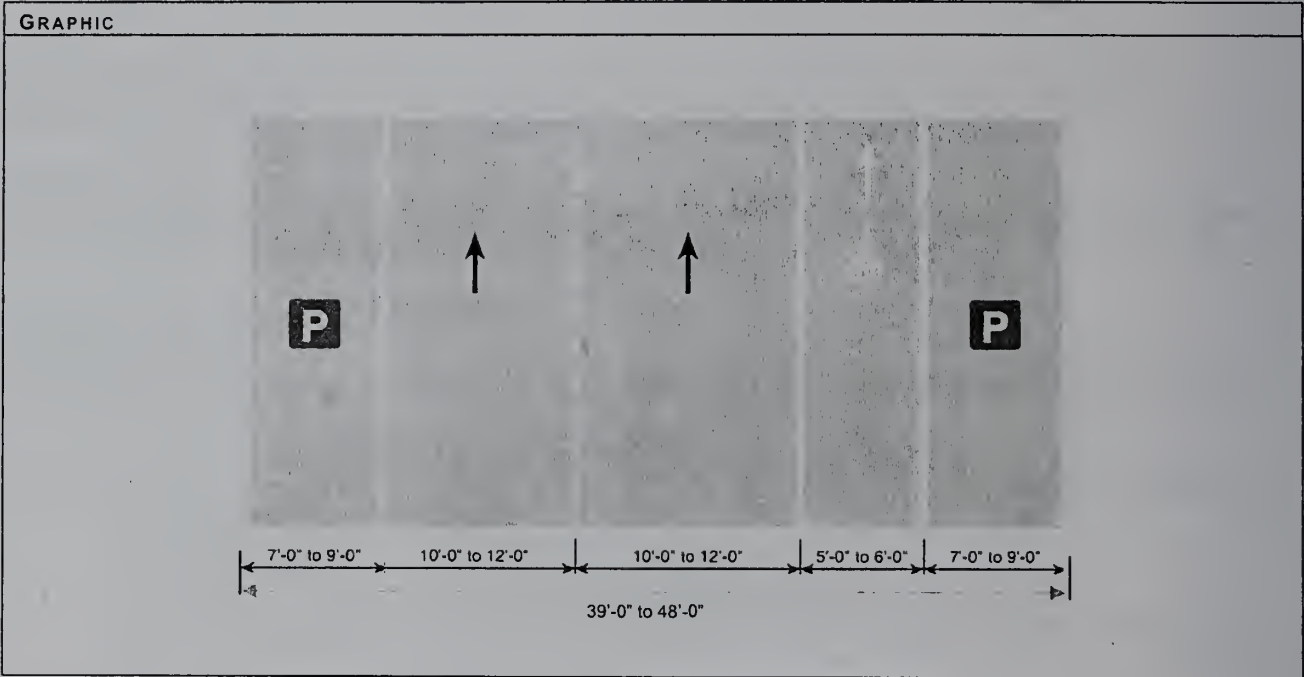


Two-Way Street (56'-0" - 78'-0" width, curb to curb)



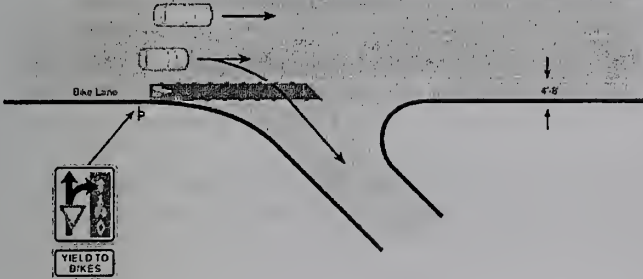
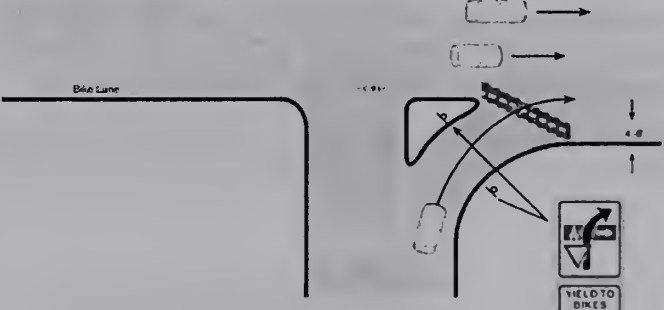
1C. BIKE LANE DESIGNS FOR ONE-WAY STREETS

DESCRIPTION
<p>The bike lane designs and guidelines for one-way streets are similar to those of two-way streets. On typical streets with on-street parking, a bicycle lane should be 5' in width. The previous pages summarize the recommended and minimum widths for bicycle lanes, parking lanes, and travel lanes.</p> <p>On one-way transit streets, bike lanes on the opposite side of the street should be considered.</p>



2. COLORED BIKE LANE TREATMENT THROUGH A CONFLICT AREA

DESCRIPTION
Colored bike lanes could be used in high-conflict areas, to alert drivers of the presence of bicyclists and bicycle lanes. These areas can be painted or treated with a thermoplastic. Typically, yield signs that instruct bicyclists and drivers about the lanes are installed wherever the colored lane treatments are used. An alternative use of colored bicycle lanes, mentioned above under "Optional Treatment" for 1B, would be to provide continuous colored bicycle lanes with a discontinuation of the coloration at conflict areas. Determination of the most effective treatment requires further study.

GRAPHIC
<div><p>Exit Ramp Zone</p></div> <div><p>Entrance Ramp Zone</p></div>

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ High volume of vehicles turning across bike lane to exit or enter a roadway in a ramp-like configuration. This should not be used in typical 4-legged intersection situations that simply have a high volume of turning motor vehicles.▪ Roadways / ramps merge at angles where motorist sight distance is impaired, or that cause motorists to be looking to merge in such a way that they may not see cyclists in a normally-marked bike lane.▪ High volume of bicyclists▪ Cyclists have priority movement <p>Other potential situations for application of colored bike lanes include:</p> <ul style="list-style-type: none">▪ Contra-flow bike lanes▪ Left-side bike lanes on high volume roads▪ Bike-only left-turn pockets

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• Portland, OR• Cambridge, MA• Montreal• Denmark• New York City

NOTES
National committees are currently reviewing the use of color for bike lane situations. Should they make a recommendation for green or other colors, the design would use the recommended coloring. Coloring should also be coordinated with colored MUNI transit lanes that are being studied. Use of this type of lane may also require changes to the California Vehicle Code. The City of Portland conducted a study of colored bike lanes through conflict zone, demonstrating that motorists yield to bicyclists 92 percent of the time (compared to 72 percent of the time before colored bike lane implementation). Fewer bicyclists approaching the conflict area looked for oncoming traffic after the blue pavement was put in place.

3A. INTRODUCTION TO BICYCLE/TRANSIT DESIGN GUIDELINES

BICYCLES AND TRANSIT POLICY

Planning for and implementation of bicycle facilities on transit routes requires an agreed-upon rationale for the placement of bicycle facilities. This policy is established in Chapter 4: Implementation of the San Francisco Bicycle Plan.

DRAFT POLICY STATEMENT*

When a bicycle facility or project is proposed for an existing transit route, the Department of Parking and Traffic Bicycle Program (DPT) bicycle program staff will review existing data on transit operations and present to MUNI a project description in order to initiate a project specific review. DPT will inform MUNI staff of the proposed project to identify specific data needs. MUNI and DPT staff will work collaboratively to determine the specific steps required to demonstrate project viability. In the event that the proposed bicycle facility is demonstrated to negatively impact transit operations based on transit service schedules or transit rider safety, then the project will not be recommended.

*This policy will be developed for the Draft Bicycle Plan Update and incorporated in the final Update based on DPT and MUNI staff input. This current page in the Supplemental Design Guideline serves as a draft and placeholder.

BICYCLES AND TRANSIT DESIGN GUIDELINES

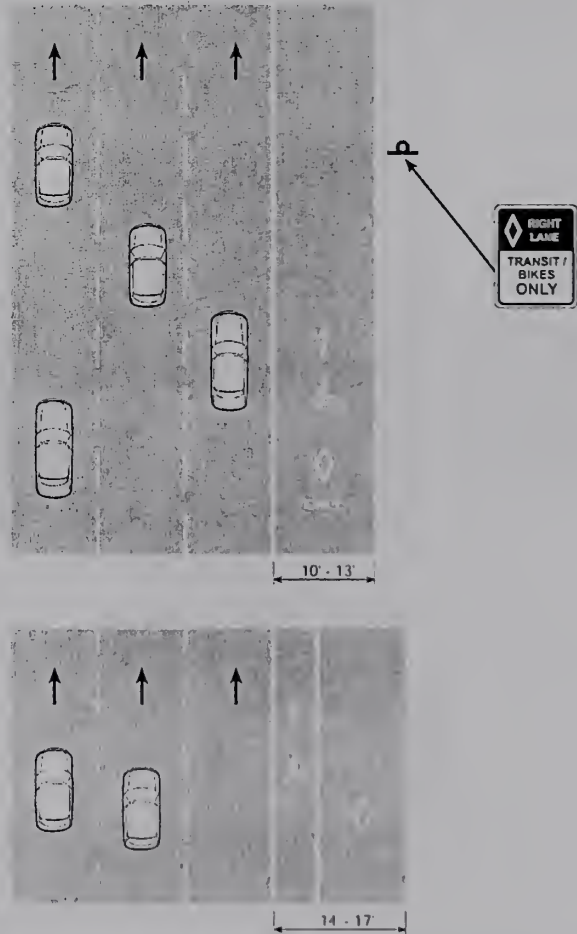
Where bicycle facilities are shown to be compatible with existing or planned transit facilities based on DPT/MUNI study of design alternatives, diagrams 3B, 4A, and 4B should be followed. These diagrams specifically related to shared bicycle and transit streets.

Additional transit related diagrams may be added to this Supplemental Design Guidelines document as required to address specific recurring circumstances involving bicycles and transit vehicles.

3B. TRANSIT STOP STRIPING: SHARED BUS/BICYCLE LANE

DESCRIPTION
The shared bus/bicycle lane should be used where width is available for a bus lane, but not a bus and bike lane. The dedicated lane attempts to reduce conflicts between bicyclists, buses, and automobiles. Various cities have experimented with different designs and there is currently no evidence of one design being more effective than the others.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">On auto-congested streets, moderate or long bus headwaysModerate bus headways during peak hourNo reasonable alternative route

GRAPHIC


NOTES
The diamond marking for bus-only lanes is being changed. This design should be updated with the new marking (yet to be determined).
Taxis and right turning vehicles are also allowed in transit lanes. A clear sign design that conveys who is allowed use of a transit lane needs to be developed.

SELECTED LOCATIONS WHERE TREATMENT IS BEING USED
<ul style="list-style-type: none">Madison, WIVancouver, CanadaToronto, CanadaPhiladelphia, PABerlin, Germany

4A. TRANSIT STOP STRIPING: FAR SIDE BUS ZONE

DESCRIPTION
This guideline details the striping of bike lanes adjacent to far-side bus zones. The bus zone will have a white striped box with BUS STOP marked inside. The bus zone box will serve as the inside demarcation between buses/bicycles. The outside bicycle lane stripe should be dashed from the crosswalk to end of the bus zone.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none"> When bus stops are located on the far side of intersections

GRAPHIC
<p>Arterial Street</p> <p>Local / Collector Street</p> <p>Begin 4" solid white 5' beyond end of bus zone</p> <p>Far Side Bus Stop 80'- Typical Bus Stop Zone, 7' wide</p> <p>6" solid white on outside of bike lane begins at corner</p> <p>4" solid white begins at end of bus stop zone</p>

NOTES
This treatment is currently being used in San Francisco.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none"> Philadelphia San Francisco

4B. TRANSIT STOP STRIPING: NEAR SIDE BUS ZONE

DESCRIPTION
This guideline details the striping of bike lanes adjacent to near-side bus zones. The solid right line of the approaching bike lane will stop 5 feet before the bus box and the left side of the bus box serves as the right bike lane stripe.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">When bus stops are located on the near side of intersections

GRAPHIC

NOTES
This treatment is currently being used in San Francisco.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">PhiladelphiaSan Francisco

5. CONTRA-FLOW BIKE LANE

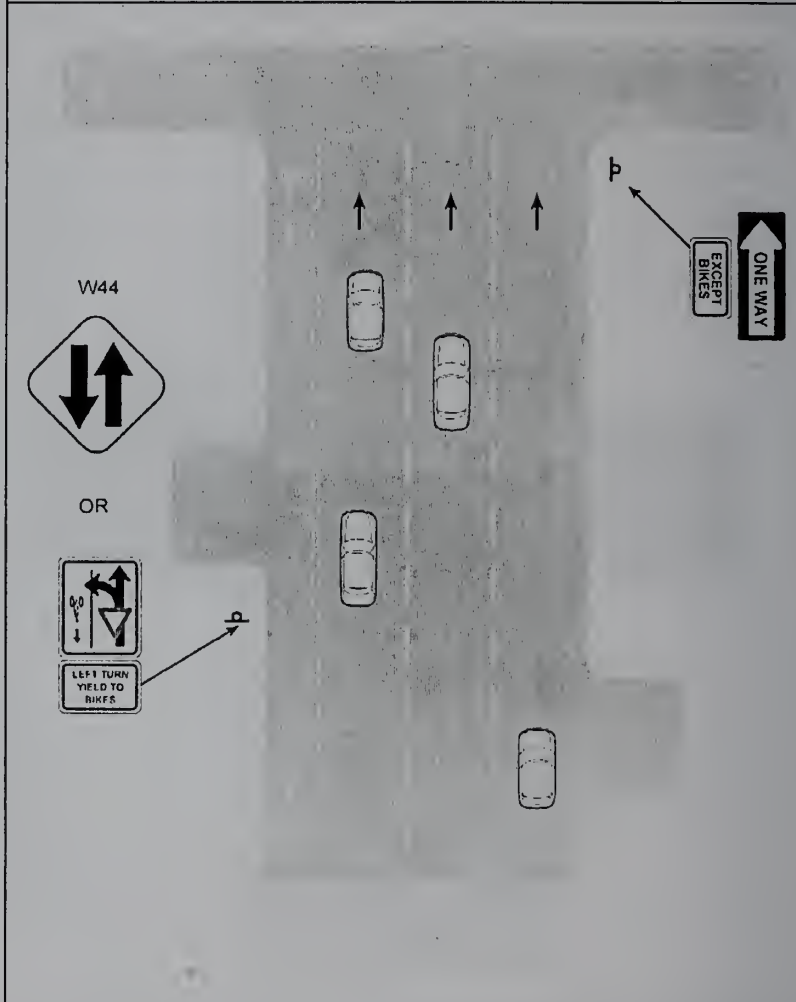
DESCRIPTION

The contra-flow bicycle lane provides a striped lane going against the flow of automobile travel. The lanes should be separated by a double-yellow line.

POTENTIAL APPLICATIONS

- Provides direct access to key destination
- Improves safety
- Infrequent driveways on bike lane side
- Bicyclists can safely and conveniently re-enter traffic at either end
- Sufficient width to provide bike lane
- No parking on side of street with bike lane
- Existing high bicycle usage of street
- Less than three blocks in length
- No other reasonable route for bicyclist

GRAPHIC



NOTES

This type of treatment should only be considered after all other methods to accommodate bicycles along a corridor have been considered. This treatment is to be considered the exception, and not the rule, for one-way streets. As a part of trial implementation, an effective sign design to accompany this treatment needs to be determined. A standard two way traffic warning sign (W44) may be most appropriate.

SELECTED LOCATIONS WHERE TREATMENT IS USED

- Portland, OR
- Madison, WI
- Cambridge, MA
- San Francisco (The Presidio)

6. BICYCLE STREAMING LANE (BIKE BOX)

DESCRIPTION
This treatment includes a bicycle lane leading to a “box” situated behind the crosswalk and in front of the motor vehicle stop bar. The bike box allows bicyclists to move to the front of the queue and position themselves for turning movements. The treatment also improves the visibility of bicyclists. A bicycle marking is stenciled in the box and should be accompanied by signs communicating where bicycles and motor vehicles should stop.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ At intersections with a high volume of bicycles and motor vehicles▪ Where there are frequent turning conflicts and/or intersections with a high percentage of turning movements by both bicyclists and motorists▪ No right turn on red▪ Can be combined with a bicycle signal (optional)

GRAPHIC

NOTES
All signage is presented as a starting point for development of a final design. Signs shown may or may not be included in a final facility design. Signage for this facility type should be consistent citywide. Use of double-wide stop bars should be considered prior to installation of additional signage.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• Eugene, OR• Portland, OR• Cambridge, MA

7. LEFT-SIDE BIKE LANE ON ONE-WAY STREET WITH STREAMING BIKE LANE (BIKE BOX)

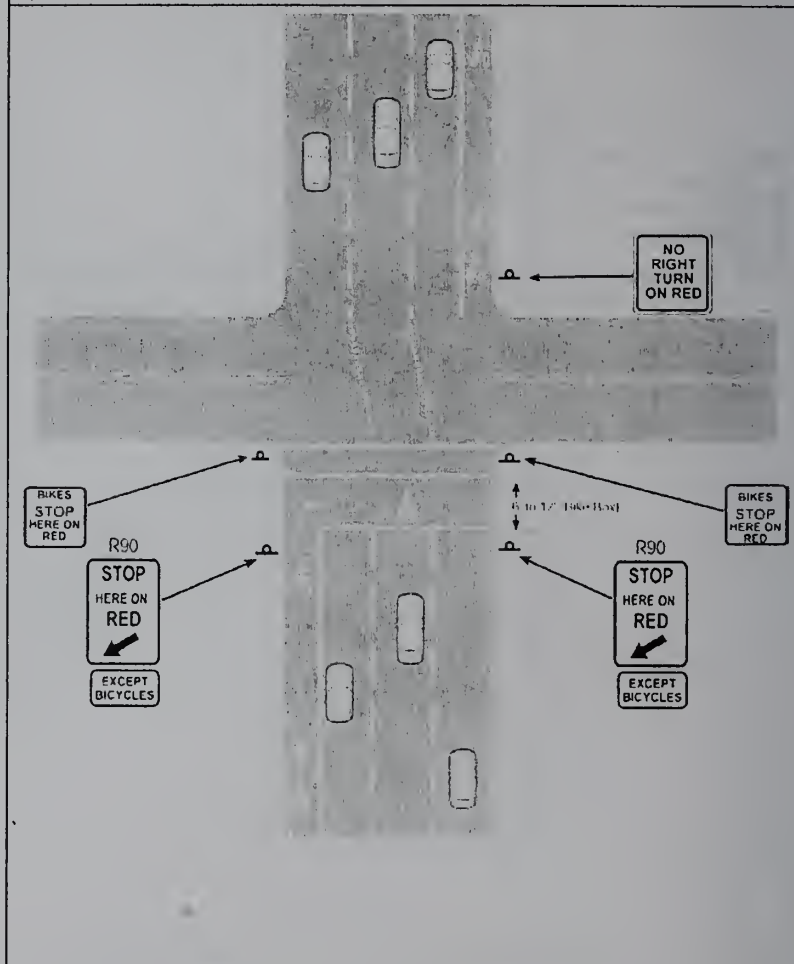
DESCRIPTION

This treatment provides a way to transition from a left side bike lane to a right side bike lane through the use of a bike box at an intersection. The bike box also allows cyclists to position themselves in front of stopped automobile traffic. The use of a bike box may be coupled with a countdown signal to inform cyclists (and pedestrians) of the available signal time to cross the street.

POTENTIAL APPLICATIONS

- Provides connection to a path or other bikeway facility
- Decreases conflicts with bus stops or highway ramps
- Where use does not interfere with near-side bus stops.
- Transition back to right-side bike lane can be made, if necessary
- Signal progression should be noted along street. If signal progression may lead to cyclists traveling perpendicular to traffic arriving at green light, reconsider bike box, or use traffic control for bikes traveling perpendicular in box, such as a bike signal
- Use with countdown signal to indicate time remaining for crossing in the bike box.

GRAPHIC



NOTES

All signage is presented as a starting point for development of a final design. Signs shown may or may not be included in a final facility design. Signage for this facility type should be consistent citywide. Use of double-wide stop bars should be considered prior to installation of additional signage.

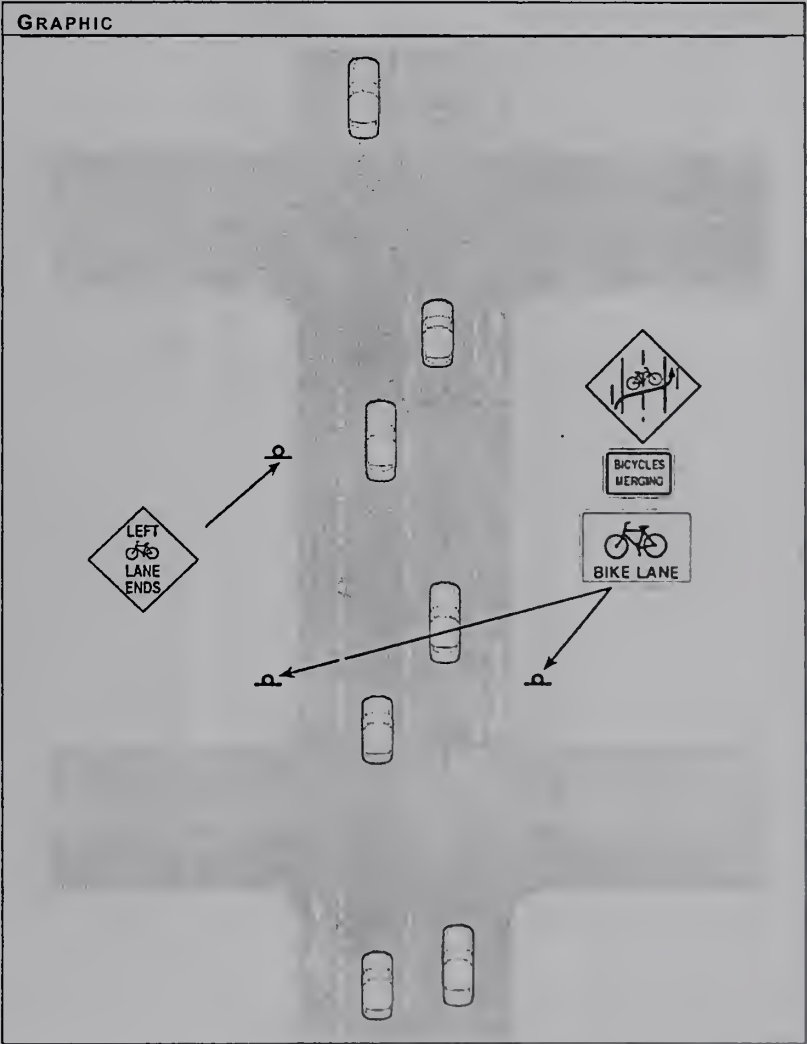
SELECTED LOCATIONS WHERE TREATMENT IS USED

- Eugene, OR
- Cambridge, MA
- European cities

8. LEFT-SIDE BIKE LANE ON ONE-WAY STREET: TWO BIKE LANE TRANSITION OPTION

DESCRIPTION
This design provides two bike lanes on a one-way road as a way to transition from a left-side bike lane to a right-side bike lane.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ Provides connection to a path or other bikeway facility▪ Decreases conflicts with bus stops or highway ramps▪ Transition back to right-side bike lane can be made, if necessary



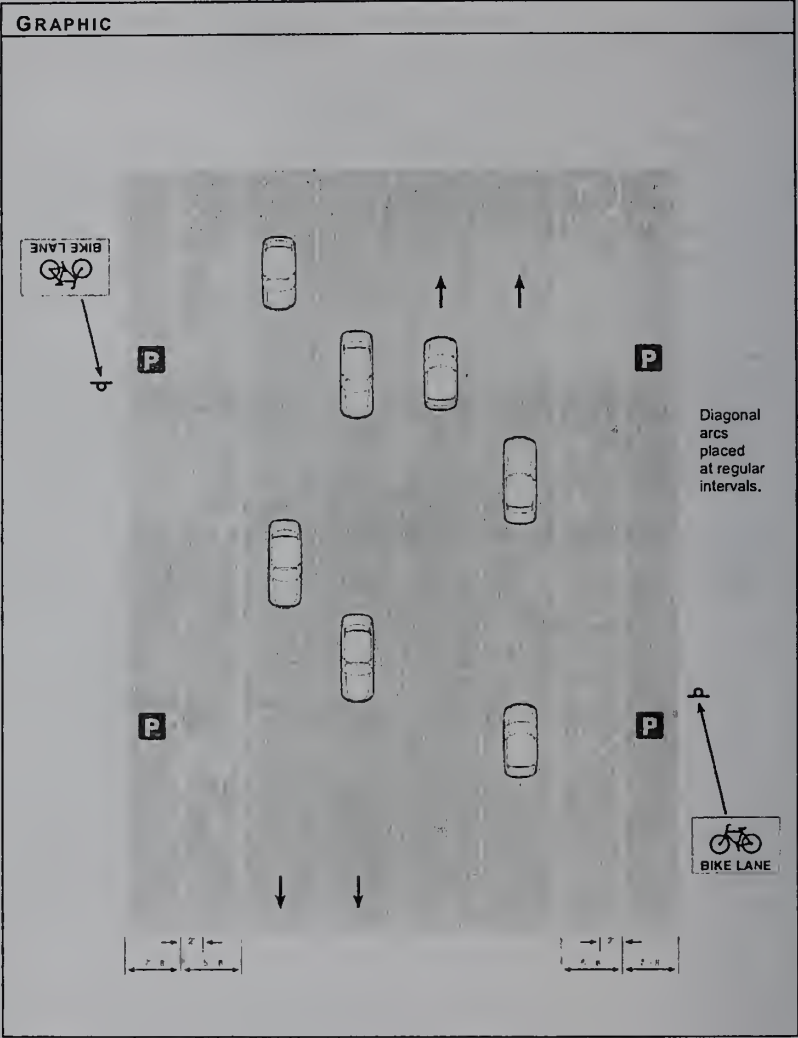
NOTES
Use of pavement messages in the left side bike lane (such as "BIKE LANE ENDS") or motor vehicle lanes (such as "BIKE MERGE AHEAD") may be appropriate.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• Portland, OR

9. BIKE LANE WITH PARKING: DIAGONAL STRIPING BUFFER

DESCRIPTION
A diagonal striping buffer could be used to indicate an area of concern for bicyclists due to the opening of car doors.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ Bike lane adjacent to on-street parking, especially with high turnover▪ Bicyclists riding in "door zone".



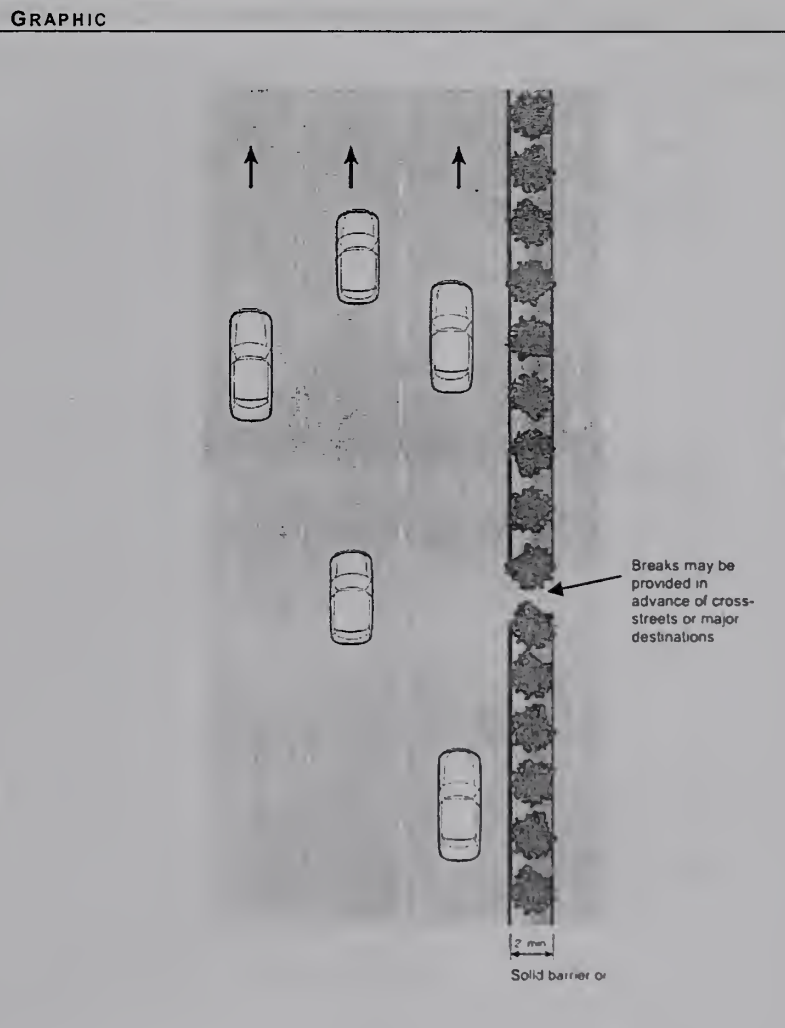
NOTES
This treatment has not been tested for its effectiveness. A before and after study is recommended before wide spread application of this treatment is recommended. In areas demarcated with parking T's, simply extending the stem of the T may discourage cyclists from riding the door zone. This treatment should be studied.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• Minneapolis, MN

10. ONE-WAY BIKE PATH (PHYSICALLY-SEPARATED LANE)

DESCRIPTION
The treatment provides a physical barrier between bikes and cars. It is useful along streets with minimal crossings. Installation of a one-way bike path should be undertaken only after careful consideration due to the problems of enforcing one-way operation and the difficulties in maintaining a path of restricted width

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ When adequate pedestrian facilities exist so that the bike facility will not be considered a "multi-use path"▪ Relatively few driveways or intersections▪ Provides connection between two shared use path facilities▪ Intersection transitions can be made▪ Moderate to high speeds▪ Regular street sweeping of track is possible▪ There is an equivalent bikeway for the opposite direction that will be more attractive for cyclists in lieu of riding the wrong way on the track▪ Where path does not interfere with transit stops

GRAPHIC


NOTES
On some routes, it may be appropriate to use soft hit posts or other means of physical separation 40 inches in height. However, Caltrans Chapter 1000 prohibits use of raised pavement markers to delineate bike lanes. There must be an equivalent bikeway for the opposite direction of travel that will be more attractive to bicyclists than riding the wrong way in the one-direction cycle track.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• European Cities• Quintana Roo, Mexico

11A. COMBINED PARKING LANE AND BIKE LANE (FLOATING BIKE LANE WITH STRIPING)

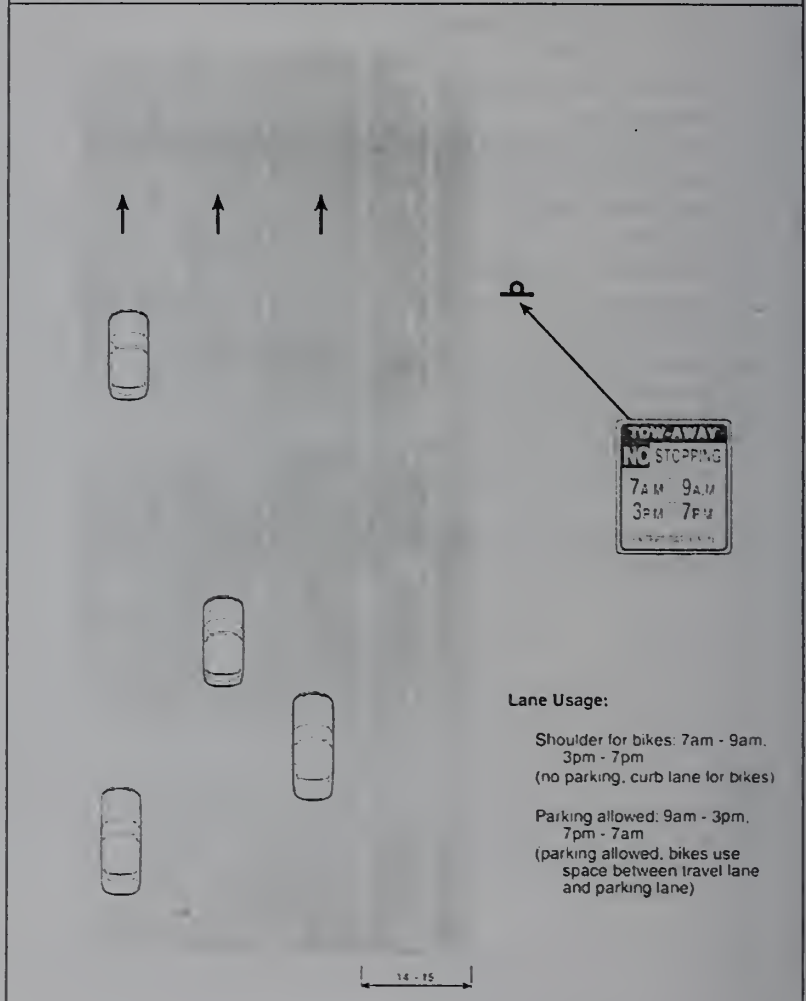
DESCRIPTION

This treatment designates a single lane to function as a parking lane, a designated bike route, and then both, depending on the time of day. During peak commute times when parking is not allowed, cyclists will use the shoulder. During off-peak hours when parking is allowed, bicyclists can use the space between the remaining automobile travel lanes and the parking lane.

POTENTIAL APPLICATIONS

- Primary bicycle commute routes
- Not enough width to provide standard bike lane and parking

GRAPHIC



NOTES

Beginning of each block must be cross hatched appropriately to prohibit parking in this location. This cross hatching treatment is used on The Embarcadero. Various treatments can be implemented as necessary, such as: cross hatching at beginning of facility, wider lane lines, merge signs, and longer parking T's to discourage use of lane by motor vehicles during off-peak hours.

SELECTED LOCATIONS WHERE TREATMENT IS USED

- San Francisco, CA (The Embarcadero)

11B. COMBINED PARKING LANE AND BIKE LANE (USING SHARED ARROW)

DESCRIPTION
This treatment designates a single lane to function as a parking lane, a designated bike route, and then both, depending on the time of day. The difference is that the "shared arrow" marking is used in lieu of striping.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ Primary bicycle commute routes▪ Not enough width to provide standard bike lane and parking

GRAPHIC
<p>The diagram shows a street layout with three lanes. The leftmost lane is a travel lane with a car icon. The middle lane is a combined parking and bike lane, marked with a 'P' symbol and a 'shared arrow' (a circle with a dot). It contains two car icons and a bike icon. The rightmost lane is a travel lane with a car icon. A 'TOW-AWAY NO STOPPING' sign is shown with an arrow pointing to the 'P' symbol. The sign text includes: 'TOW-AWAY NO STOPPING', '7 A.M. TO 9 A.M.', '3 P.M. TO 7 P.M.', and 'EXCEPT SAT & SUN'. Below the diagram, a dimension line indicates a width of 14' 15".</p> <p>Lane Usage:</p> <p>7am - 9am, 3pm - 7pm: No parking, curb lane for bikes</p> <p>9am - 3pm, 7pm - 7am: Parking allowed, bikes use space between travel lane and parking lane</p>

NOTES
"Shared Use Arrow" and "Chevron" stencil symbols are being evaluated for this application.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• None known

12. BICYCLE BOULEVARD

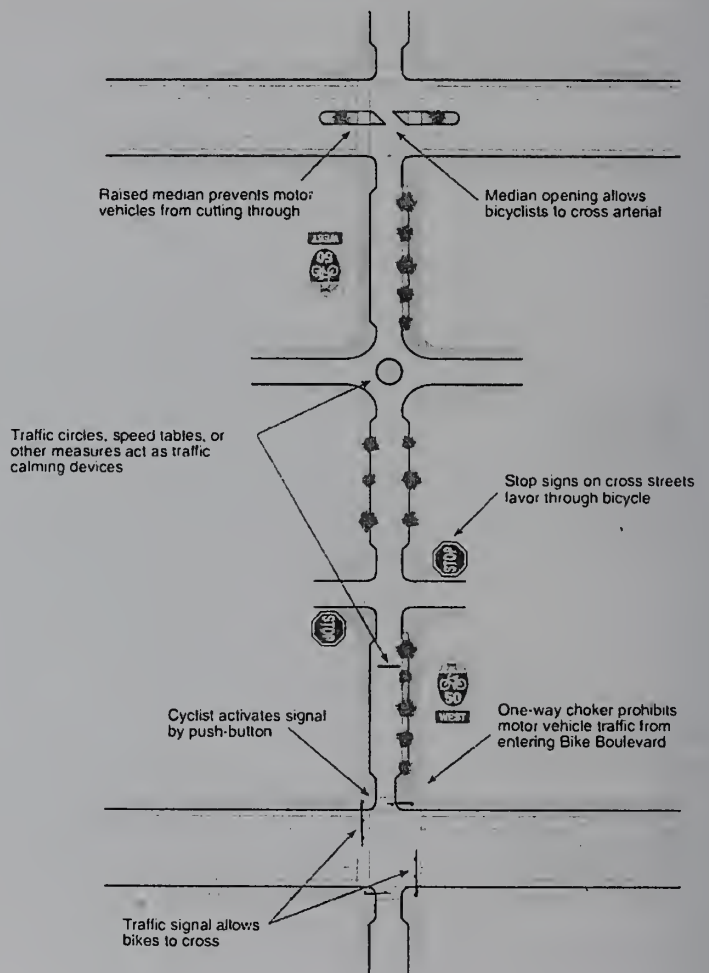
DESCRIPTION

The bicycle boulevard treatment is typically a lower volume street with traffic calming treatments that parallels a higher volume arterial. Traffic calming typically includes a set of improvements to slow traffic and prevent cut-through traffic such as: traffic circles, chokers, and medians. In addition, stop signs favor bicyclists by stopping perpendicular traffic. Push-buttons activate traffic signals to allow safe crossings of higher volume roadways.

POTENTIAL APPLICATIONS

- Low volume streets
- Calming traffic on streets within 1/4 mile of parallel arterials
- Allows access to key destinations
- Provides safe arterial street crossing

GRAPHIC



NOTES

20 mph speed limits should be considered.

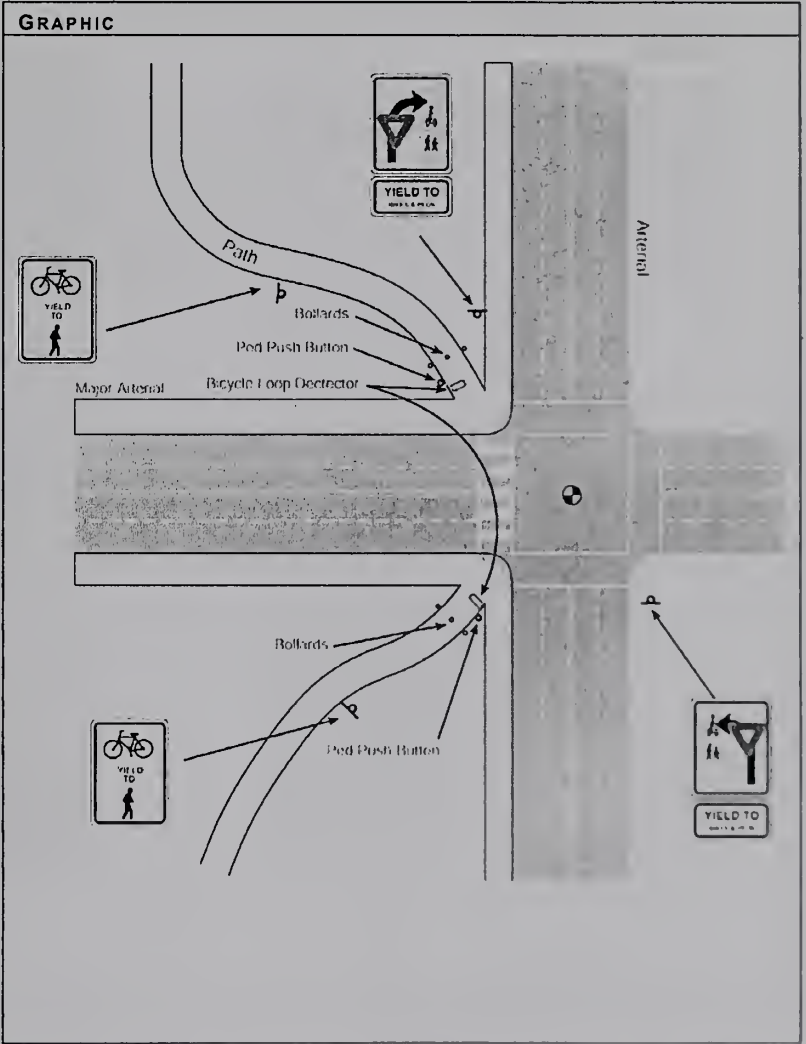
SELECTED LOCATIONS WHERE TREATMENT IS USED

- Portland, OR
- Palo Alto, CA
- Berkeley, CA
- Vancouver, BC

13. CLASS I PATH CROSSING OF ROADWAY

DESCRIPTION
<p>This treatment provides a design for locations where Class I off-street paths cross roadways. Bollards and path geometry could be used to slow path users as they approach the intersection, however the use of bollards should only be used with prudence and where motorized vehicles may attempt to drive on paths.</p>

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ Intersections of Class I paths and high volume and/or high speed roadways▪ Can also be used at a signalized mid-block crossing with median



NOTES	SELECTED LOCATIONS WHERE TREATMENT IS USED
	<ul style="list-style-type: none">• Throughout the United States

14A. BIKE-ONLY LEFT-TURN POCKETS: SCENARIO 1

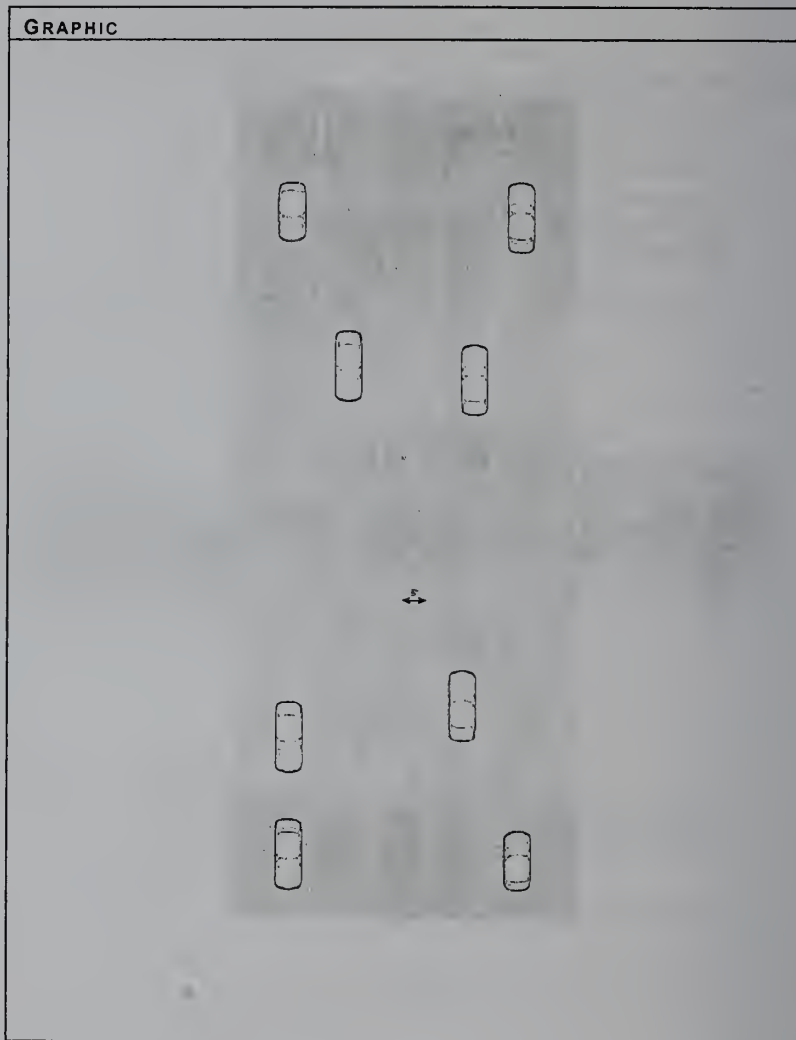
DESCRIPTION

A left-turn pocket allows only bicycles to access a bicycle boulevard or designated bicycle route. The intersection is controlled and the left-turn pocket may have a left arrow signal, depending on bicycle and vehicle volumes. Signs should be provided that prohibit motorists from turning, while allowing access to bicyclists. Bicycle signal heads may also be used.

POTENTIAL APPLICATIONS

- Motor vehicle movement prohibited
- Low-speed roadway
- On lower volume arterials and collectors

GRAPHIC



NOTES

Proper signage must accompany this treatment

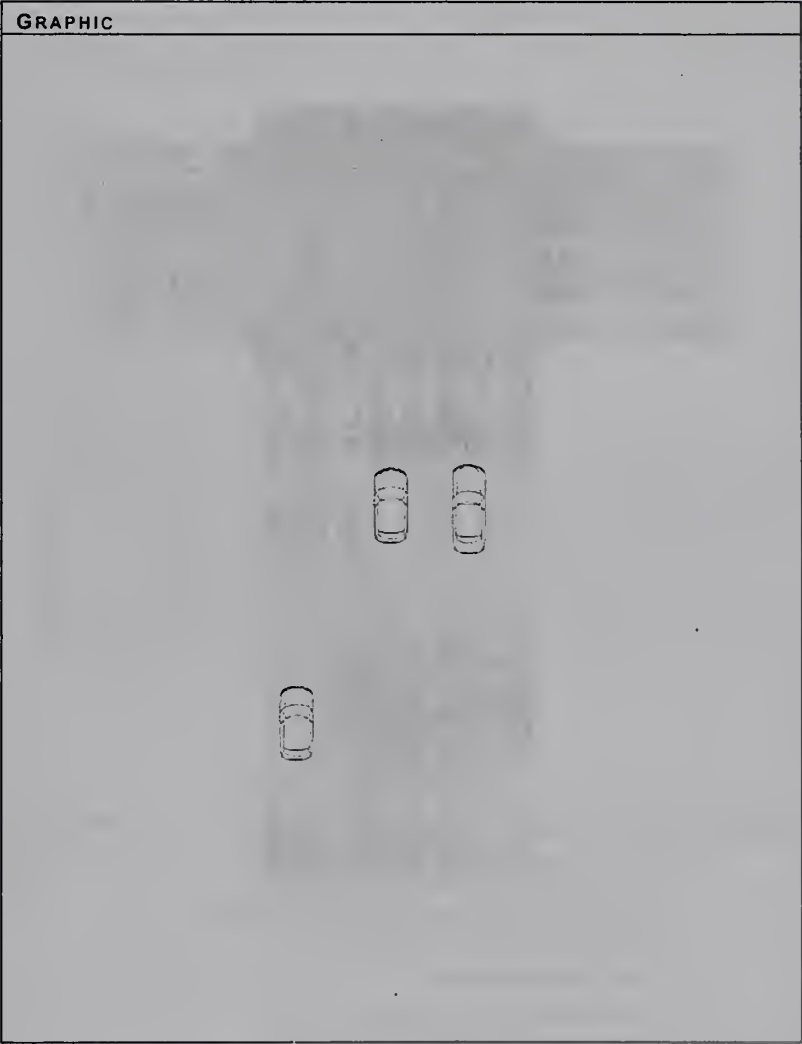
SELECTED LOCATIONS WHERE TREATMENT IS USED

- Portland, OR

14B. BIKE-ONLY LEFT-TURN POCKETS: SCENARIO 2

DESCRIPTION
This treatment shows a standard-width bicycle lane adjacent to the left-hand turn lane in order to reduce conflicts with turning vehicles.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ Low-moderate speeds▪ On lower volume arterials and collectors▪ Heavy vehicular left-hand turning movements

GRAPHIC


NOTES
The Bicyclists Merging sign may be placed on the right side of the road before the left-side turn pocket.

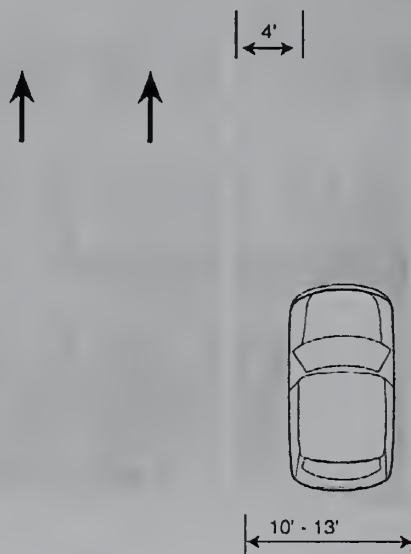
SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• San Francisco, CA (7th St at 16th St)• Flagstaff, AZ

15. SHARED BICYCLE/ RIGHT-TURN POCKET

DESCRIPTION

This treatment places a standard-width bicycle lane on the left side of a dedicated right-hand turn lane when there isn't enough room for both. A dashed stripe delineates the space for bicyclists and motorists within the right-hand turn lane. Signs should be installed to instruct bicyclists and motorists of the usage of this facility.

GRAPHIC



POTENTIAL APPLICATIONS

- On roadways where there is not enough space to implement a standard-width bicycle lane and a standard-width dedicated right-turn lane at the intersection
- Low speed roadways
- Low volume of heavy vehicle traffic (or those needing a large turning radius)

SELECTED LOCATIONS WHERE TREATMENT IS USED

- Eugene, OR
- Maui, HI

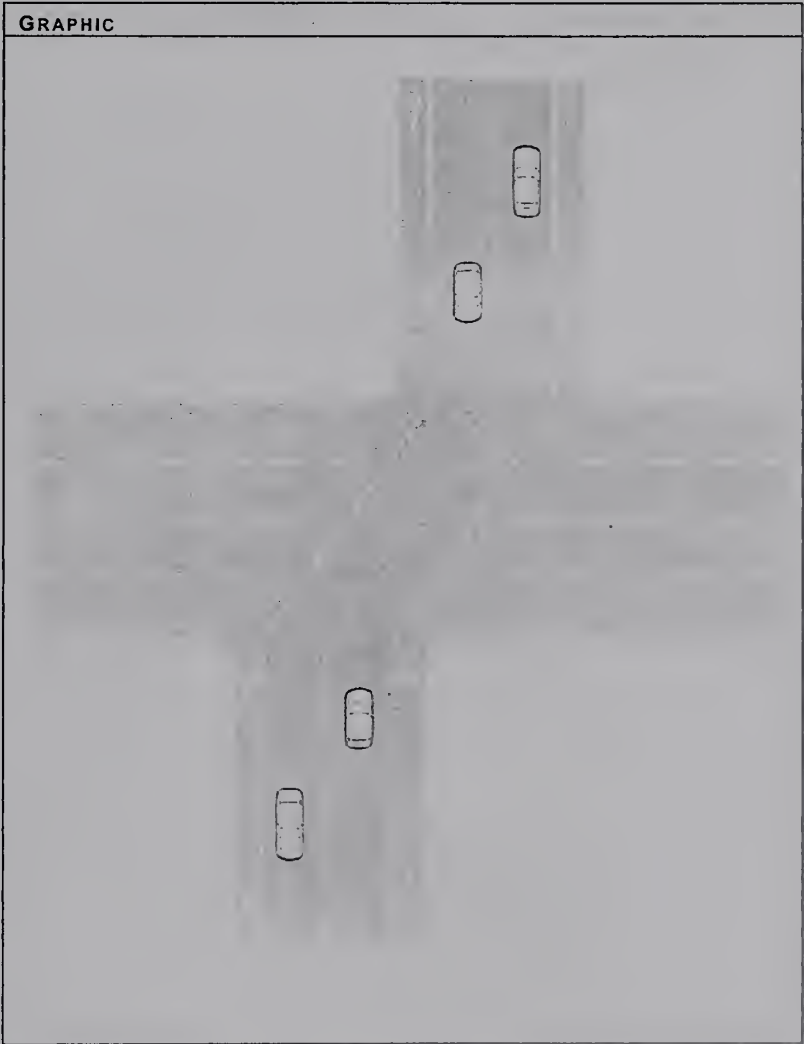
NOTES

Shared-Lane Arrow placed at outside turn lane may prove to be more appropriate marking for this treatment.

16. BIKE LANE THROUGH A COMPLEX INTERSECTION

DESCRIPTION
This treatment uses dashed markings to guide bicyclists and motorists through complex and/or confusing intersections. It also provides a benefit by making the bicycle network visible to travelers on perpendicular streets

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">▪ Where intersections are offset by about 7' to 30'▪ Where there are more than four intersection legs▪ There is a need to assist vehicle through an intersection.▪ Where there are significant grades, especially where visibility is compromised▪ In large, wide intersections▪ At intersections with especially high bicycle cross-traffic



NOTES
This treatment may be perceived as guidance for bicycles, however it is helpful for all users of the roadway. The HDM does not recommend striping bike lanes through intersections. The HDM does allow "Detail 40" guidelines to aid road users. This is the approach that San Francisco has applied.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">• Paris, France

17. BIKE LANES ADJACENT TO BACK-IN DIAGONAL PARKING

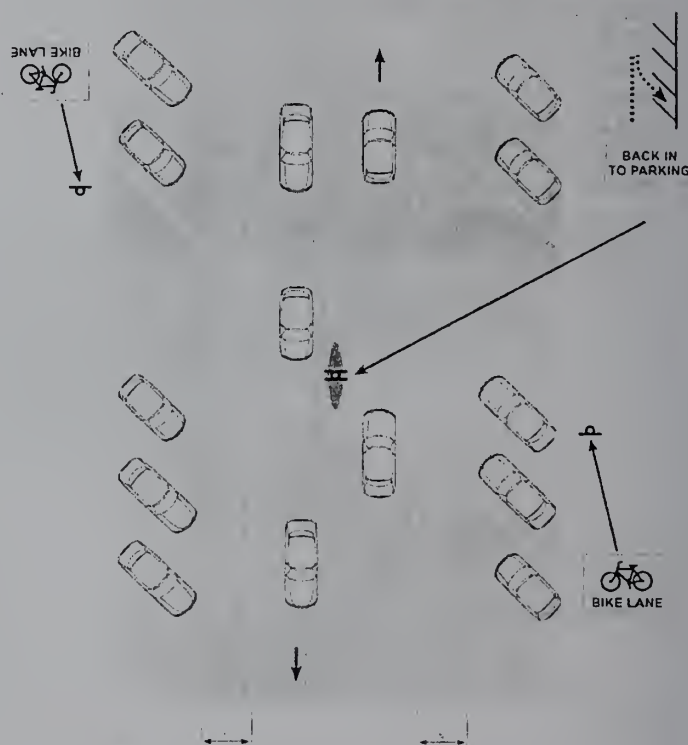
DESCRIPTION

Vehicular movements in and out of diagonal parking presents hazards to bicyclists. For this reason, it is recommended to avoid diagonal parking configurations adjacent to bike routes. At locations where diagonal parking is absolutely necessary, back-in parking should be used. This requires drivers to pull in front of a vacant space and reverse into the parking space. This forces the drivers to look behind them before crossing the path of oncoming bicyclists, and improves motorists' sightlines of oncoming bicycle and motor traffic while exiting.

POTENTIAL APPLICATIONS

- Use where diagonal parking is necessary

GRAPHIC



NOTES

Specific language for signage associated with this treatment will be evaluated as a part of implementation design. Language used by Pottstown, PA (Philadelphia) reads "BACK IN ANGLE PARKING ONLY" behind every third stall. Parking stall widths wider than normal may be needed to accommodate drivers unfamiliar with back in parking. A City ordinance change may be required to specify back in angle parking to create a legal basis for this configuration.

SELECTED LOCATIONS WHERE TREATMENT IS USED

- Seattle, WA

18. SHARED-LANE ARROW MARKING

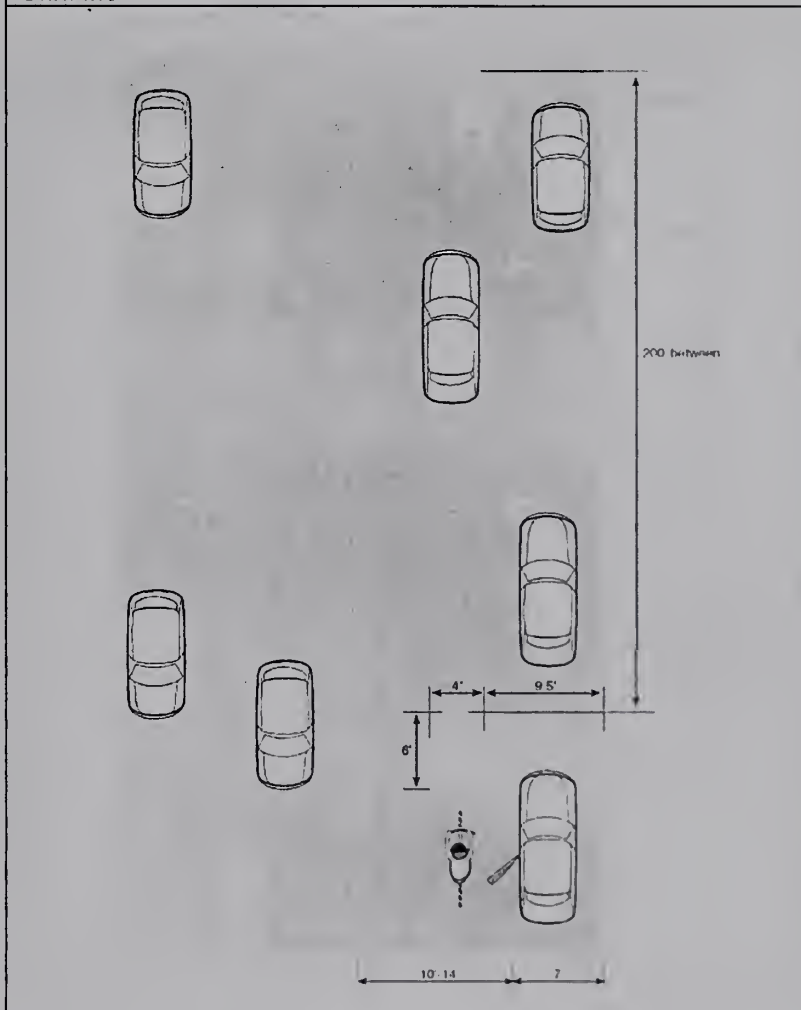
DESCRIPTION

The primary purpose of this measure is to provide positional guidance to bicyclists on roadways (that are too narrow to be striped with bike lanes). Markings may be placed on the street to inform motorists about the presence of cyclists, and also to inform cyclists how to position themselves with respect to parked cars and the travel lane. The design, placement, and effectiveness of the marking is currently being studied by the City of San Francisco.

POTENTIAL APPLICATIONS

- Roadways that are too narrow for standard striped bike lanes
- Areas that experience a high level of "wrong-way" riding
- Areas with moderate to high parking turnover

GRAPHIC



NOTES

At the time of writing, this marking treatment was being studied for effectiveness by the City of San Francisco. The exact design for the marking and other details such as placement and spacing will be determined after the study is completed.

SELECTED LOCATIONS WHERE TREATMENT IS USED

- San Francisco
- Denver, CO
- Paris, France
- Gainesville, FL

19A. DOUBLE TURN LANES: SHARED LANE

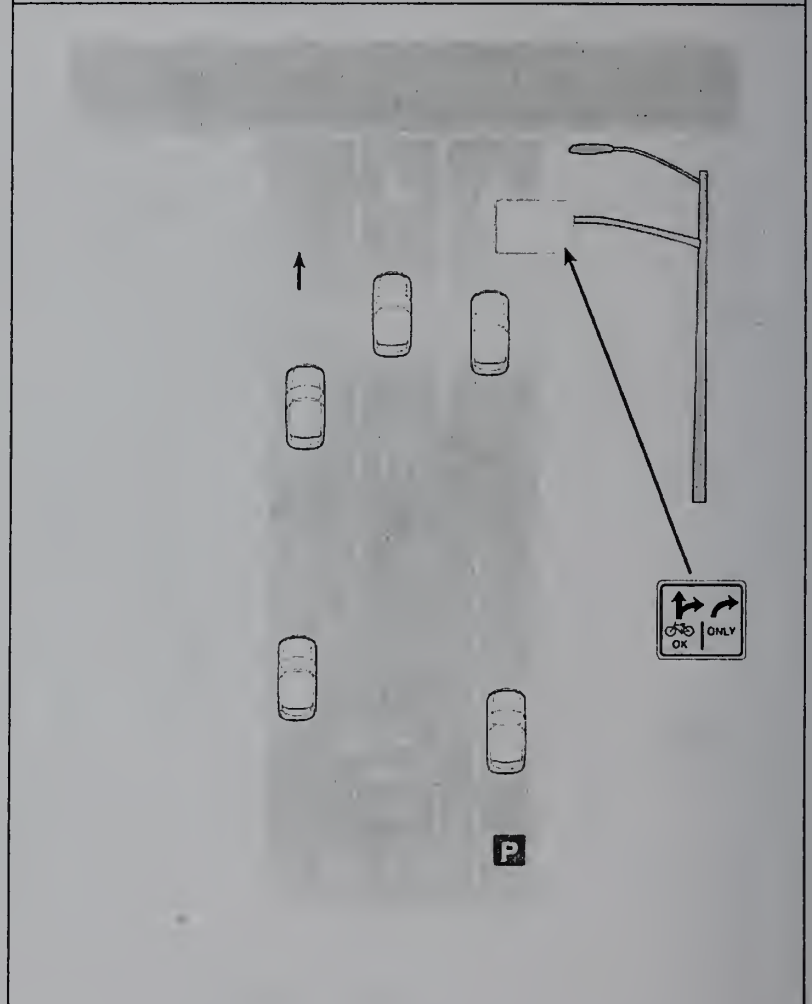
DESCRIPTION

The use of double-turn lanes should be discouraged because of the difficulties they present for pedestrians and bicyclists. Existing double-turn lanes should be studied and converted to single-turn lanes, unless found to be absolutely necessary for traffic operations. In situations where the double-turn lane cannot be avoided, the following design can be used to safely accommodate bicyclists. This design uses the shared arrow stencil to indicate that bicyclists and automobiles are to share the through/turn lane. This properly positions through bicyclists and reduces conflicts with right turning vehicles.

POTENTIAL APPLICATIONS

- In double right turn situations with a right-turn lane and a through/turn lane.

GRAPHIC



NOTES

SELECTED LOCATIONS WHERE TREATMENT IS USED

- San Francisco, CA

19B. DOUBLE TURN LANES: "GHOST" BIKE LANE

DESCRIPTION
The use of double-turn lanes should be discouraged because of the difficulties they present for pedestrians and bicyclists. Existing double-turn lanes should be studied and converted to single-turn lanes, unless found to be absolutely necessary for traffic operations. In situations where the double-turn lane cannot be avoided, the following design can be used to safely accommodate bicyclists. This design positions bicyclists in the through/turn lane while giving more clear delineation of safe travel path than the "shared lane" approach. The bicyclist therefore "blocks" the motorists in this travel lane.

POTENTIAL APPLICATIONS
<ul style="list-style-type: none">In double right turn situations with a right-turn lane and a through/turn lane, where a double-right turn is absolutely necessary for traffic operations

GRAPHIC

NOTES
Shared-Lane Arrow placed at center of through/turn lane may prove to be more appropriate marking for this treatment, as shown in 19A. Motorist understanding of the shared lane marking requires study. Inclusion of bike box in front of through/turn lane should be considered.

SELECTED LOCATIONS WHERE TREATMENT IS USED
<ul style="list-style-type: none">None known

20. SUPPLEMENTAL BICYCLE FACILITY SIGNS AND SIGNALS

DESCRIPTION

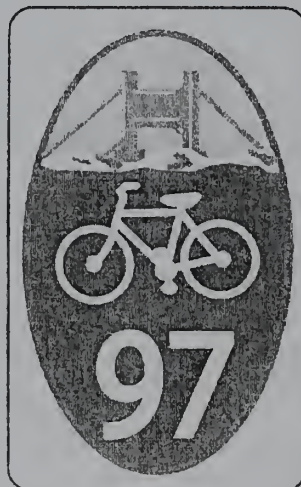
The following sign designs may be used in connection with the treatments listed in this guide or at locations with standard bike facilities that would benefit from their installation. This listing is meant to supplement the signs listed in the Manual of Uniform Traffic Control Devices (MUTCD) and the Caltrans Traffic Manual. While signs help to inform behavior, it is important to select signage carefully. Overuse of signage can lead to visual clutter which in turn, lessens the effectiveness of the signs and decreases the aesthetic quality of the street.

NON MUTCD SIGNS, CALIFORNIA STANDARDS

The following signs do not conform to MUTCD standards, but are currently approved for use in California and are used in San Francisco.



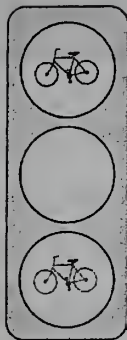
Local Bicycle Route Sign: Street signs with a green bridge icon indicate local bicycle routes.



Cross Town Bicycle Route Sign: Street signs with a red bridge icon indicate cross-town routes



Bicycle Route Detour Sign: Street signs with a black background and orange foreground indicate detoured bicycle routes.

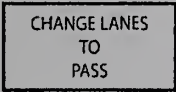


This bicycle-specific signal head may be used as per the standards set by CTCDC, 11/19/99. The signal provides a separate phase specifically for bicyclists.

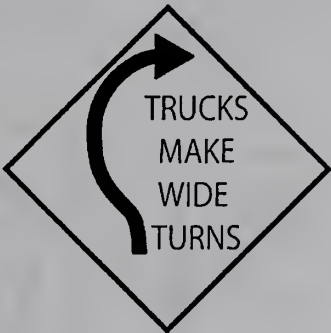


This sign may be used to warn bicyclists and motorcyclists of track crossings.

NON STANDARD SIGNS CURRENTLY IN USE IN SAN FRANCISCO
The following non standard signs are currently used in San Francisco.



Bicycles Allowed Use of Full Lane Sign: Indicates bicycles allowed full use of lane in situations where no bicycle lanes exist or where merging with vehicle traffic is required for safe operations.



Trucks Make Wide Turns Sign: Indicates to bicyclists and motorists that large trucks will swing left prior to making right turn. Sign warns bicyclists of potential right-side conflicts.



This sign may be used at an intersection with double turn lanes.



This sign may be used to indicate an alternative route for bicyclists.



Custom made placards such as this may be used to address unique lane positioning situations for bicyclists.



This sign may be used to discourage motorists from parking in bike lanes.



This sign may be used to direct bicyclists to bike parking.

NON STANDARD SIGNS TO BE CONSIDERED FOR USE IN SAN FRANCISCO

The following non standard signs should be considered for use in San Francisco.



This sign may be used to indicate bike lane transitions or other locations where bicyclists may be merging.



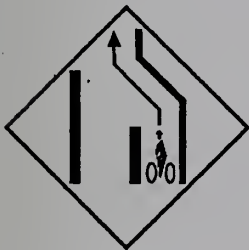
This sign may be used on a contra-flow lane treatment.



This sign may be used where a travel lane crosses a colored-lane treatment



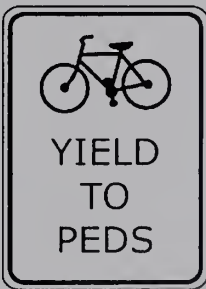
This sign may be used on a contra-flow lane treatment.



This sign may be used to indicate the ending of a bike lane where bicyclists need to merge.



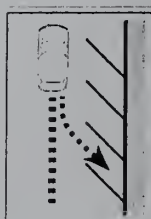
This sign may be used at multi-use path-roadway crossings. Sign should face motorists.



This sign may be used on Class I multi-use paths.



This sign may be used where bicyclists must use a pedestrian signal to cross an intersection.



BACK IN
TO PARK

This sign may be used to indicate areas of back-in angled parking.



BIKES IN TUNNEL
WHEN LIGHTS FLASH
SPEED 30

This sign may be used to warn motorists of the presence of bicyclists.



XING

This sign may be used to warn motorists of the presence of bicyclists.



ON ROADWAY

This sign may be used to warn motorists of the presence of bicyclists.

APPENDIX B. SHARED USE PAVEMENT ARROW STUDY

San Francisco's Shared Lane Pavement Markings: Improving Bicycle Safety



FINAL REPORT
February 2004

Prepared for:



San Francisco Department of
Parking & Traffic

Prepared by:



Alta Planning + Design

Acknowledgements

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*Special thanks to James Mackay, Denver Bicycle Planner,
for introducing and championing the shared lane marking concept.*

This project was funded through a Transportation
Development Act Article 3 grant, with oversight from the
California Traffic Control Devices Committee.



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Project Need

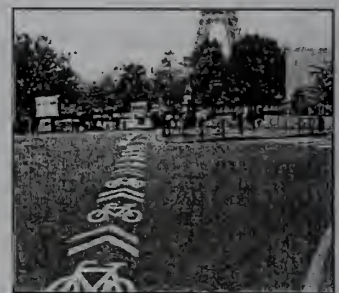
Traffic curb lanes on signed/shared Class III bikeways (a.k.a. “signed shared roadways” in other states) are often too narrow to be safely shared side-by-side by cyclists and passing motorists. On these routes, cyclists wishing to stay out of the way of drivers often ride too close to parked cars and risk being struck by a suddenly opened car door (being “doored”). To avoid this, experienced cyclists ride further to the left and position themselves closer to the center of narrow lanes. This is permitted by the California Vehicle Code (C.V.C. 21202), but it often irritates motorists who are not aware that this is permitted. To address this and other problems, the San Francisco Bicycle Plan recommends that Class III bike routes be delineated with on-road markings. However, no approved standard pavement marking exists for this purpose. As a result, the following problems have arisen, particularly on higher traffic volume roadways:

- High incidence of "dooring",
- Wrong-way riding,
- Sidewalk riding, and
- Motorist squeezing cyclists against the curb or parked cars, or exhibiting other aggressive behaviors.

Many cities have experimented with a "shared lane marking" as a potential solution. The marking does not connote a separated bicycle lane, but instead directs the bicyclist to travel outside the car door zone and encourage safe co-existence. Such cities include Denver (CO), Gainesville (FL), Cambridge (MA), Portland (OR), Oakland (CA), Paris (France), Brisbane (Australia), Zurich (Switzerland), Buenos Aires (Argentina) and others (see Appendix A for details of these and other efforts.) The only city to study the effectiveness of such markings is Gainesville (FL), which found that the markings caused cyclists to shift their positions by a few inches, a positive result.

The City and County of San Francisco has in particular experienced a high frequency of complaints and problems due to increasing volumes of bicyclists on streets with high traffic volumes and heavily-used on-street parking. In 1998, San Francisco began experimenting with a green* pavement marking, referred to as "bike-in-house," similar to that of Denver (CO), on various streets. While cyclist feedback was generally positive, there was concern about the marking's low visibility. As other jurisdictions began using varying marking designs, questions also arose about the need for a standard application of spacing, size, and location, as well as whether the marking was effective, safe, and beneficial.

Thus, the San Francisco Department of Parking and Traffic (SF DPT) undertook this study to determine the effectiveness of shared lane pavement markings in encouraging safe bicyclist and motorist coexistence. The process ideally



Paris, France



Denver, Colorado



Portland, Oregon

* San Francisco used green as its marking color for the “bike-in-house” marking because it was not in use as a standard color for on-street traffic control devices.

will lead the California Traffic Control Device Committee (CTCDC) to formally approve and effective shared lane marking for use throughout the state.

Goals

The purpose of this study is to determine the effectiveness of shared-lane markings in achieving three distinct goals.

Goal 1: Improve the position of both motorists and bicyclists on roadways without bicycle lanes

Measure of Effectiveness:

- Distance of bicyclist from adjacent parked cars.
- Distance of motorist when passing a bicyclist.

Note: All study streets have on-street parking; however, if there is no parked car at the study site the measurement shall be to the curb face.

Goal 2: Reduce aggressive motorist behavior

Measure of Effectiveness:

- Observable hostile behaviors such as honking, gestures or other behaviors when passing or waiting to pass a bicyclist.

Goal 3: Encourage correct bicyclist riding behavior

Measure of Effectiveness:

- Number of bicyclists riding on the sidewalk.
- Number of bicyclists riding wrong-way on the street.

Additional Objectives

Shared-lane markings may also have the following effects:

- Inform motorists to expect bicyclists on the roadway.
- Inform motorists that bicyclists may indeed legally ride further to the left in the travel lane, even if that means blocking the lane at times.
- Inform bicyclists how to position themselves in the lane with respect to the curb or parked cars to avoid hazards.
- Increase the number of cyclists as people may feel more comfortable riding on streets with markings.

Arrow Designs

Human Factors Survey: Findings

The marking design in other cities is quite varied, as seen in Appendix A. Recognizing that an infinite number of possible design variations exist (size, color, shape, etc.), SF DPT undertook a human factors survey of the three most commonly used marking designs in the U.S.. The study compared driver and bicyclist comprehension of three alternative designs for the shared-use marking. Staff presented 120 bicycling commuters and 120 motorist commuters with one of three photographs (Figure 1) showing a typical urban street with a different kind of shared lane marking. They then asked a series of open-ended questions to determine:

- What they felt they should do in that scenario if they were bicycling/driving,
- Why they would react that way, and
- What they thought the pavement marking in particular meant they should to do.

Key results included:

- All three markings encouraged motorists to be more aware of bicycles.
- The bike-and-separate-arrow marking frequently conveyed the incorrect message “bike straight only at the intersection ahead.”
- The bike-and-chevron marking was more likely to elicit the response to slow down than the bike-in-house symbol.
- Significantly more respondents thought the bike-and-chevron marking indicated a shared use lane than the bike-and-separate-arrow marking.
- About half of the surveyed bicyclists thought they should stay in the right lane and follow the arrow.



Bike-and-chevron marking



Bike-and-separate-arrow marking



Bike-in-house marking

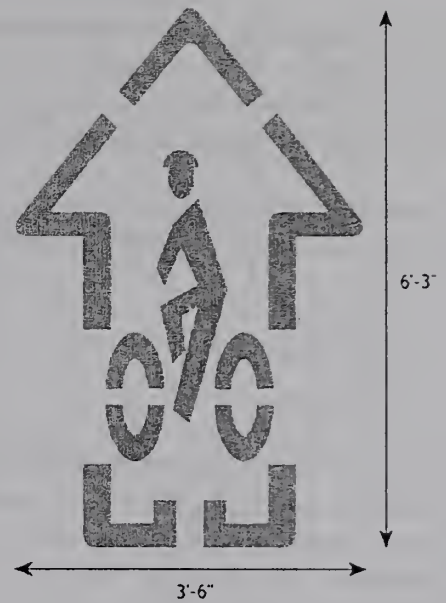
Figure 1. Survey Exhibits: Photographic Renderings

Selected Designs

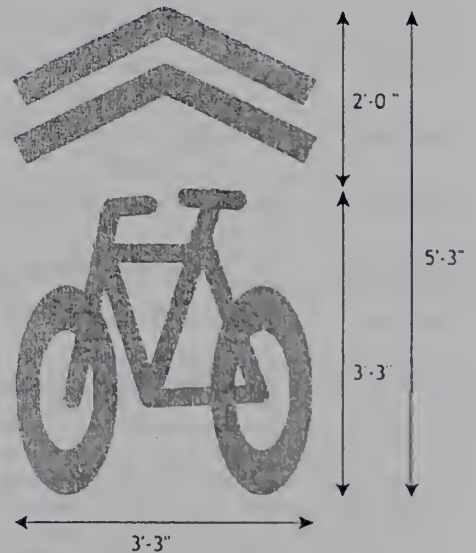
As a result of this research, as well as review from a Technical Advisory Committee, SF DPT chose to study the two designs shown in Figure 2.

The **modified bike-in-house** is 42 inches (3'-6") wide at the arrow points, 28 inches (2'-4") wide at the bottom channel, and 75 inches (6'-3") long. The rider is 28 inches wide at the wheels and 48 inches tall. Compared to the original bike-in-house used on various streets, the bicyclist is twice as large, the overall marking is 3 inches longer, and the overall width remains the same. In addition, a bike wheel channel was created at the bottom to encourage cyclists to ride on the arrow.

The **bike-and-chevron** marking is used in Paris and Chicago. Technical advisory committee members also strongly recommended studying the bike-and-chevron marking.



Modified "bike-in-house" marking



Bike-and-chevron marking

Figure 2. Selected Designs for the Study

Before-and-After Videotape Analysis

The primary approach used to evaluate cyclist and driver behavior was a before/after videotape study. In addition, the consultant team and the San Francisco Bicycle Coalition (SFBC) administered surveys to cyclists and drivers to gauge their perceptions about the effectiveness of the markings. This document presents the findings of both the video study and surveys.

The consultant team collected more than 140 hours of video, primarily during the weekday commute, at six locations (see photos starting on page 7):

- Polk Street
- 17th Street
- 2nd Street
- Market Street (weekday/midday location)
- JFK Drive (weekend/weekday location)
- Stanyan Street (weekend location)

The locations are heavily-used bicycle routes for both utilitarian and recreational cyclists. The streets have on-street parking with relatively narrow (≤ 22 feet) outside shared lanes (including parking) and no bicycle lanes. They have varied traffic volumes and roadway width characteristics (see Table 1). The markings were placed so that the centerline is 11 feet from the curb, or about 4 feet from parked cars (see Figure 3).

Table 1. Characteristics of Marking Locations

Street	Location	# of Lanes	Curb Lane Width (includes parking)	ADT ¹ (Volume)
Polk Street	between Washington and Sacramento	two-lane road	22'	high ADT/lane
17th Street	between S. Van Ness and Dolores ²	two-lane road	22'	moderate ADT/lane
Second Street	between Mission and Howard	four-lane road	17'	moderate ADT/lane
Market Street	between Van Ness and Octavia ²	four-lane road	18' to 19'	high ADT/lane
JFK Drive	between 8 th and 10 th Ave.	four-lane road	17' to 19'	moderate ADT/lane
Stanyan Street	between Haight and Frederick	four-lane road	16'-10"	moderate ADT/lane

¹ Heavy ADT is defined as more than 4000 vehicles per day per lane of traffic. Moderate ADT is defined as between 2000 and 4000 vehicles per day per lane of traffic.

² 17th Street (between Dolores and Valencia) and Market Street (between Octavia and Gough) were marked by DPT with green pavement arrows years prior to the Before/After Study. These green test arrows were removed prior to the initiation of the "Before" video documentation.

Note: Other streets—Fell St., 8th Ave., Transverse St., Page St. —were considered but not selected for analysis as the budget allowed for only six streets. The selected streets offer a good range of comparable issues.

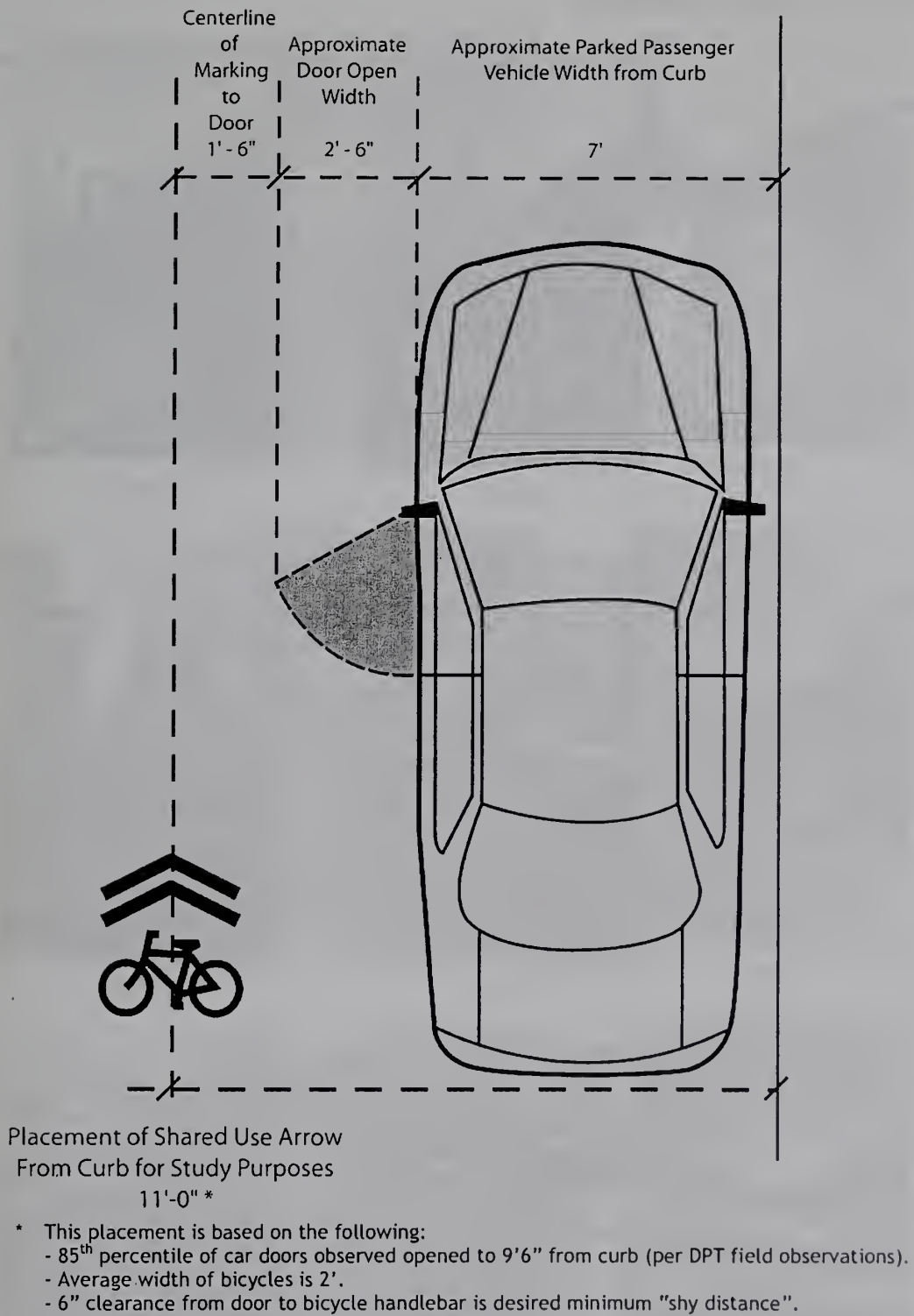


Figure 3. Plan View of Marking Placement

Locations of Study Markings

17th Street



eastbound



westbound

2nd Street



northbound



southbound

Market Street

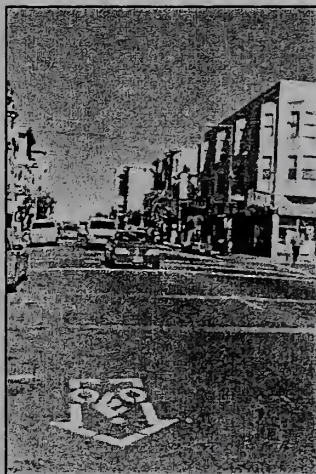


westbound



eastbound

Polk Street



southbound



northbound

Stanyan Street



northbound



southbound

JFK Drive



eastbound

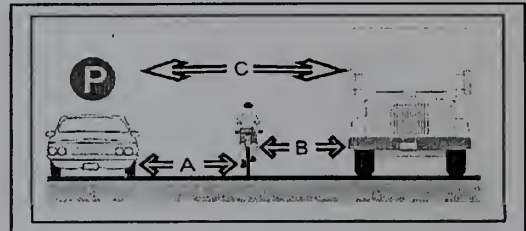


westbound

Summary of Data Collection

Sample Size

- 6 locations
- 140 hours of videotaping
- "Before" study:
 - 1100 cyclists
 - 1000 motor vehicles
- "After" study:
 - 1300 cyclists
 - 1400 motor vehicles



Time of Study

- Spring-Summer 2003
- Various times during the day, depending on street

Variables Studied

- Number of travel lanes
- Traffic volume
- Curb lane width
- Location
- Time of day
- Marking type

Recorded Behaviors

- Cyclists' positions (A and B in the above diagram)
- Motorists' positions (B and C in the above diagram)
- Cyclist direction
- Cyclist location (street vs. sidewalk)
- Visible conflicts between cyclists and motorists

Note: Distances were measured to and from the tires of the car or bicycle. Based on review of the videotapes and the videographer's perceptions, the presence of the video camera did not seem to alter cyclists' or drivers' behaviors. However, the use of a video camera angled at oncoming cyclists did present a potential measurement error of up to 3 inches due to the inherent distortion of the view field. This measurement error could be eliminated in future studies through the use of an overhead-mounted camera or laser measurement device.

Results

Technical Results

Overall, the stencil markings significantly* improved both motorists' and cyclists' positions in the roadway (using the median average positions). The markings also reduced sidewalk and wrong-way riding.

Goal 1: Position of bicyclists and motorists

- Finding 1: Overall, the presence of a marking increased the distance of cyclists to parked cars by 8 inches. The effect of each marking on position was similar (see Figure 4).

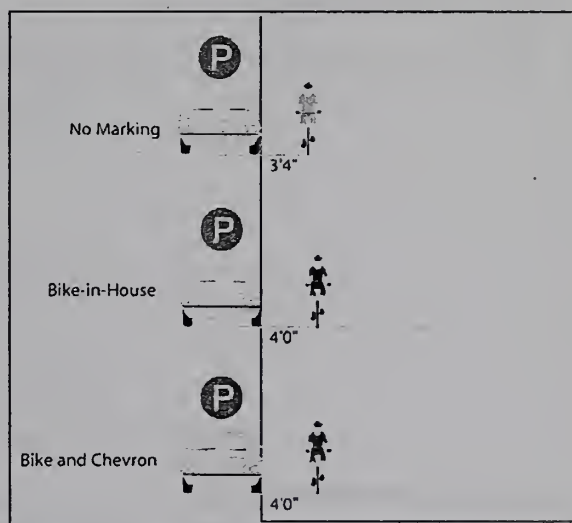


Figure 4. Effect on Bicycle to Parked Car Spacing

- Finding 2: When passing vehicles were present, the markings caused an increase of 3 to 4 inches in the distance between cyclists and parked cars. In addition, the markings caused an increase of over 2 feet in the distance between cyclists and passing vehicles. The bike-and-chevron had a greater effect (by 3 inches) on the distance between cyclists and passing vehicles (See Figure 5).

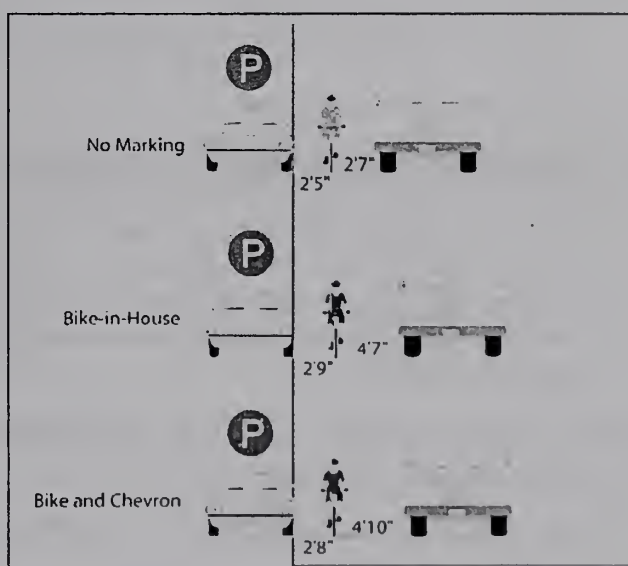


Figure 5. Effect on Motorist and Bicyclist Spacing

* The use of the term, "significant" means that the observed change was the result of a change in the variable (i.e., the pavement marking), as opposed to normal variance in the measurements. Significance has been determined through the use of a variety of statistical tests and tools including χ^2 (chi-squared) tests and multiple linear regression where appropriate. The χ^2 tests were used to compare the before/after results for behaviors such as cyclists' location and direction. Linear regression was used to analyze the measured results in relation to the markings.

(Goal 1 Continued)

- Finding 3: When no cyclists were present, both of the markings had a significant positive effect of about one foot on the distance between passing vehicles and parked cars (see Figure 6).

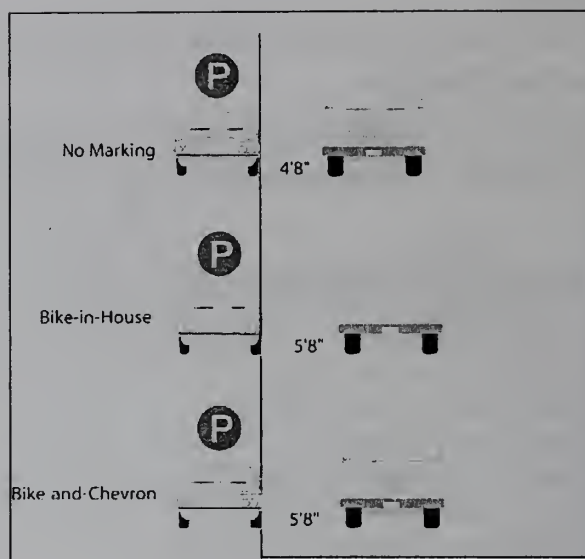


Figure 6. Effect on Motor Vehicle to Parked Car Spacing

Goal 2: Reduction in aggressive motorist behavior

- The markings neither significantly reduced nor increased the number of observable hostile behaviors between bicyclists and motorists. This was primarily due to the low number of aggressive behaviors recorded in the "before" videotapes.

Goal 3: Reduction in improper bicycle behavior

- Both the markings significantly reduced the number of sidewalk riders: the bike-and chevron by 35% and the bike-in house by 25%.
- The bike-and-chevron marking significantly reduced the number of wrong-way riders by 80%. The bike-in-house marking did not have any significant impact on the percentage of wrong-way riders.

Table 2 provides a summary of these findings. Complete results are on file with the San Francisco Department of Parking and Traffic's Bicycle Program.

Table 2. Summary of Bicyclists' and Motorists' Behavior

Behaviors	Before	After	
	(No marking) sample size=1158	Bike-in-House sample size=570	Bike-and-Chevron sample size=794
Sidewalk riders	6.5%	4.9%	4.2%
Wrong-way riders	3.0%	3.3%	0.60%
Hostile behaviors	0.15%	0.17%	0.12%
Distance of cyclists to parked cars	3'-4"	4'-0"	4'-0"
Distance of cyclists to cars in travel lanes	2'-7" sample size=150	4'-7" sample size=59	4'-10" sample size=150
Distance of cars in travel lane to parked cars (no bike present)	4'-8"	5'-8"	5'-6"

Significant differences are indicated in **boldface**.

Variables Influencing Results

Various factors contributed to these study results, including:

- Number of travel lanes
- Traffic volume
- Curb lane width
- Time of day (AM Peak/PM Peak/weekday midday/weekend)

Each variable was classified in two groups (such as high/low, narrow/wide, or AM/PM). The median and mean average distances were isolated and cross-tabulated for different factors and were compared to see if the variables had an effect on distances between cyclists, parked cars, and passing cars. Table 3 summarizes the characteristics' effects on cyclists and motorist positions. A complete listing of the cross-tabulated results is on file with the SF DPT Bicycle Program.

Table 3. With Markings in Place, Significant Street Characteristics Affecting Behavior

Factor	Effect on Distance between Bicyclists and Parked Cars	Effect on Distance between Bicyclists and Passing Vehicles
More lanes (4 vs. 2)	increase	decrease
Higher traffic volume	no effect	no effect
Wider curb lane	decrease	increase
AM vs. PM	no effect	no effect
Peak Periods	decrease	decrease

In comparing the effects of the markings on rider position on streets with different characteristics, the study found that:

- The markings have a **greater effect on distance** between cyclists and parked cars on **four lane roads** than on two lane roads.
- The markings have a **greater effect on distance** between cyclists and parked cars on **heavy volume roads** than on moderate volume roads lane roads.
- Curb-lane width and time of day did not have a significant effect on how much the markings changed behavior.

Table 4 summarizes the findings of each of the markings.

Table 4. Summary Comparison of Markings

Study Issues	Bike-in-House	Bike-and-Chevron
1. Did the marking increase the distance of bicyclists from adjacent parked cars?	YES	YES
2. Did the marking increase the distance between passing motorists and cyclists?	YES	YES
3. Did the marking reduce observable hostile behaviors?	UNDETERMINED ¹	UNDETERMINED ¹
4. Did the marking reduce incidences of sidewalk riding?	YES	YES
5. Did the marking reduce incidences of wrong-way riding?	NO	YES

¹ There were too few incidents to reach a statistical conclusion.

Cyclist and Driver Survey Results

Staff and volunteers surveyed 103 San Francisco cyclists and 23 motorists about the bicycle markings at three locations: Polk Street, 2nd Street, and Market Street*. Approximately equal numbers of surveys were collected for both kinds of markings (see Table 5).

Table 5. Surveys Completed

Location	Marking Type				Sub-Totals		Totals
	Chevron		Bike-in-House				
	Cyclists	Drivers	Cyclists	Drivers	Chevron	Bike-in-House	
Market St.	20	--	45	--	20	45	65
Polk St.	7	11	8	12	18	20	38
2nd St.	23	--	0	--	23	0	23
Totals	50	11	53	12	61	65	126 ¹

¹ While the grand total of cyclists surveyed is 128, two cyclist surveys returned did not include location or marking type information, and thus are not included in this chart.

The survey queried bicyclists' and drivers' understanding and perception of the markings. The results were coded in Microsoft Excel and analyzed using SPSS Statistical Software. Complete results are on file with the San Francisco DPT Bicycle Program.

In summary, the bicyclists surveyed see the markings as a step in the right direction and felt that the markings increased their sense of safety. However, the intended message of the markings was not fully understood. This could be remedied through a public information campaign.

The majority of the drivers surveyed claimed not to notice the markings. Since the sample size of drivers was so small, the results do not provide conclusive findings. Of the drivers that noticed the markings, there was no significant advantage of one marking over the other, but the drivers did not seem to confuse the markings with bike lanes.

* Surveys were administered roughly a half-block "downstream" of the markings during weekday peak travel times. The surveyors asked approaching cyclists if they would fill out the surveys on the spot (no surveys were mailed). Small warning signs (with the words, "Bike Surveys") were placed about 50 feet before the surveyors. About 25% of passing cyclists filled out the survey, which took an average of three to four minutes to complete. Drivers were surveyed as they arrived to their respective destinations along Polk Street.

Location and Rider Characteristics

Since most of the surveys were conducted on major commute routes during peak times, recreational and beginner cyclists are under-represented. Practically all of the interviewed cyclists categorized themselves as either intermediate (25%) or advanced (74%) urban cyclists. Typically, these cyclists are more likely to "take the lane" in urban traffic situations. Most of the cyclists were commuting to/from work (63%) or riding for utilitarian purposes (25%). Practically all of the cyclists were between the ages of 19-60 (60% 19-35 years old, 38% 36-60 years old).

Message

- Many cyclists believed that the markings indicated that the right lane served as a bike route or lane or that bikes have priority (30%) (see Figure 7).
- About 15% of cyclists felt that the marking indicated that bicyclists were allowed full use of the travel lane. 75% of these "take the lane" respondents had ridden over the bike-in-house marking.
- A few cyclists thought that the marking signified that a bike lane would be installed at the location in the future (2%).
- Of the motorists that responded, two out of the seven that noticed the markings understood that the marking indicate that they should allow more room for cyclists.

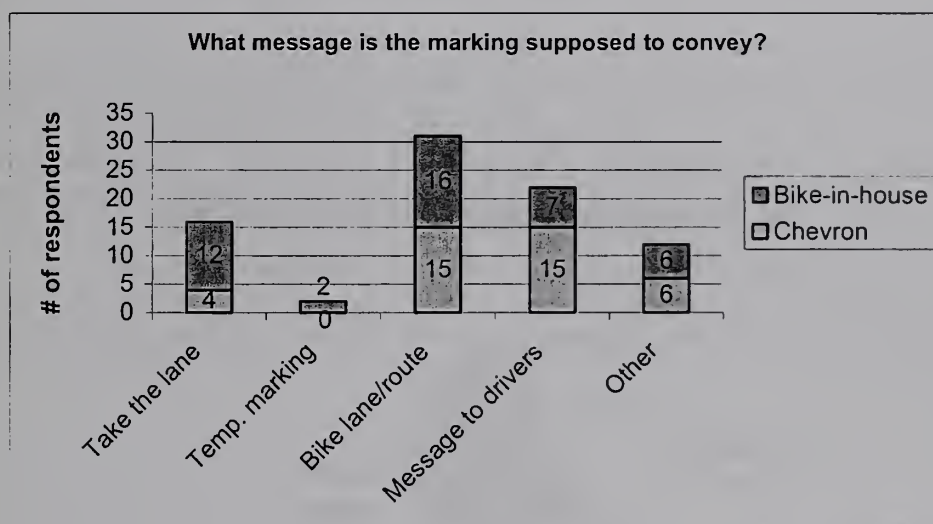


Figure 7. Cyclists' Responses to Survey - Message

Perception of Impact on Behavior

- Of the riders who noticed the markings, 33% felt that they did not change their position.
- Of the 33% of cyclists that felt that the marking affected their position (See Figure 8), 100% said that they rode closer to the center of the lane, often over the center of the marking.
- 60% of cyclists felt that the markings increased their sense of safety (See Figure 9).
- 35% felt that the marking improved driver behavior, 36% felt that the marking had no impact on driver behavior, and 29% were unsure (See Figure 10).
- One-third of drivers felt that the markings improved their behavior.

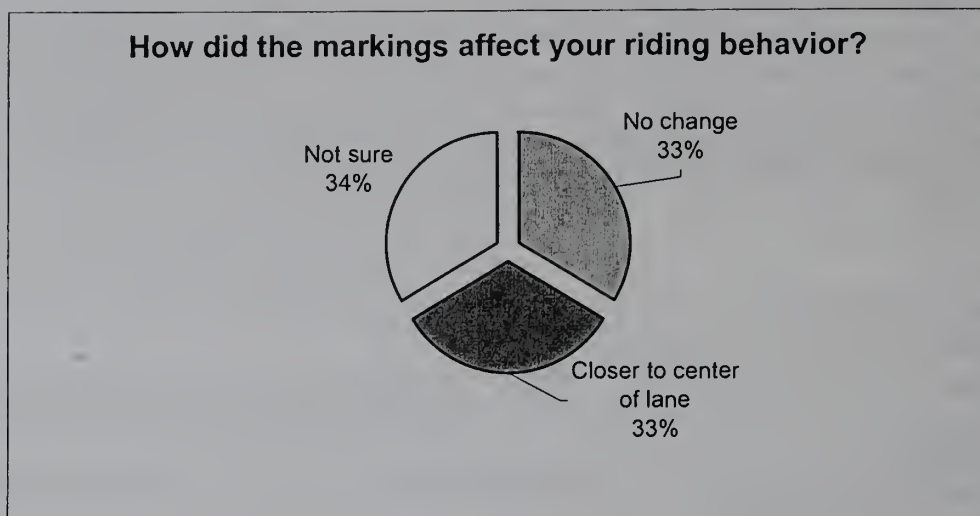


Figure 8. Cyclists' Responses to Survey - Riding Behavior

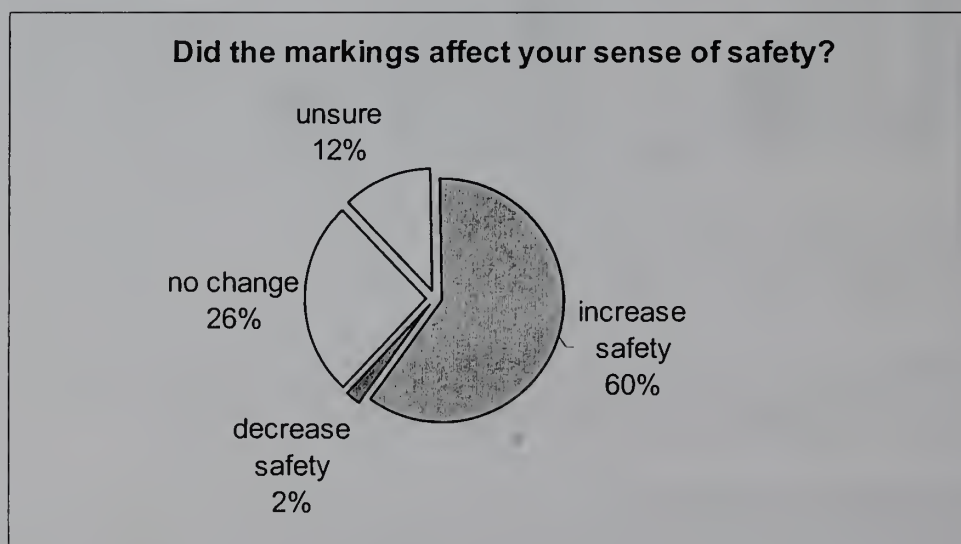


Figure 9. Cyclists' Responses to Survey - Sense of Safety

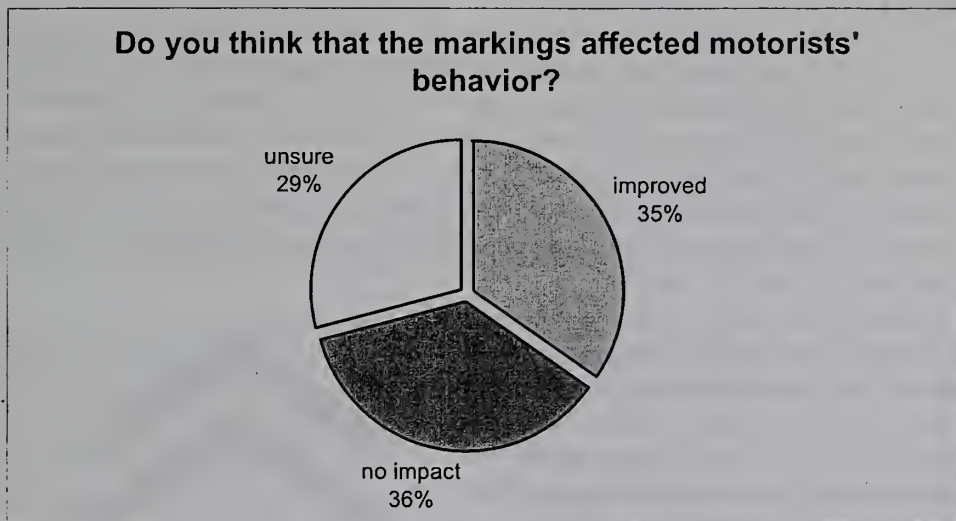


Figure 10. Cyclists' Responses to Survey - Motorists' Behavior

Visibility

- Of the 105 surveyed cyclists, 76 (72%) noticed the markings. About the same percentage of cyclists noticed each of the markings. When prompted, cyclists preferred the bike-and-chevron marking over the bike-in-house marking by a two to one ratio.
- Many cyclists also commented that the large, white markings are more visible and preferable to the green bike-in-house markings painted on San Francisco streets in the past.
- Of the 23 motorists that were surveyed on Polk Street, only seven (30%) noticed the markings. None of the respondents mentioned a preference for either marking. It should be noted that from the perspective of the driver, the chevrons appear "flat." Several cyclists made this comment as well. Many of the motorists felt that there was not enough room for cyclists on Polk Street.

Conclusion

This research has proven that shared lane pavement markings in San Francisco have a positive impact on motorist and cyclist behavior, positions, and safety. These results are complementary to a 1999 Florida study (Florida Department of Transportation, *Evaluation of the Shared-Use Arrow*). While both studies found that such markings significantly reduce wrong-way and sidewalk riding, the Florida study found a much smaller impact on cyclists' positions. In contrast to San Francisco, the Florida study measured rider positions on roadways with no on-street parking, and on streets where cyclists were less likely to "take the lane".

The bike-and-chevron marking had a stronger impact on motorist positioning and in reducing wrong-way riding and is preferred by cyclists surveyed. **Based on these findings, the project team recommends the bike-and-chevron marking be used as a standard marking for shared-use lanes on appropriate streets in San Francisco.** Based on comments received, the pitch of the chevron should be increased by approximately 6 inches (see Figure 11.) The project team also recommends that the California Traffic Control Devices Committee adopt this marking as an optional marking for Class III bikeways throughout California.

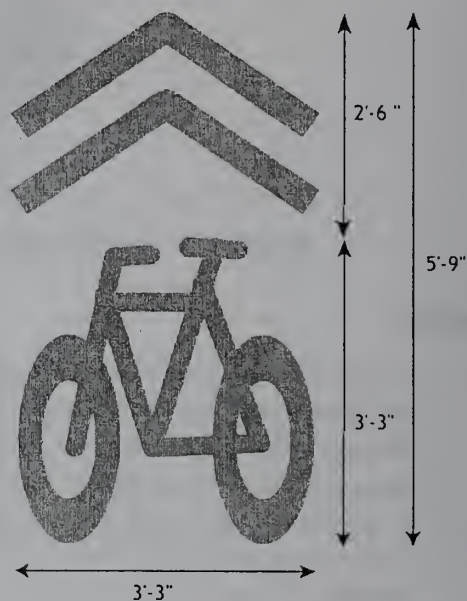


Figure 11. Recommended Modified Bike-and-Chevron

Appendix A: Pavement Markings in Other Cities

Various symbols have been tried by cities in the U.S., Europe and Australia. The symbols have been installed where bike lanes cannot be installed for various reasons including:

- Not enough cyclists;
- Too expensive;
- Requires loss of parking; and/or
- Requires road widening or other unacceptable trade-off.

To better understand these bicycle pavement symbol efforts, staff gathered information regarding (a) their use, (b) their effectiveness, (c) preferred installation locations, and (d) types of material, size, and color used. This report is a summary of the information gathered from:

- Brisbane, Australia
- Chicago, Illinois
- Oakland, California
- Denver, Colorado
- Cambridge, Massachusetts
- Paris, France
- Portland, Oregon
- Gainesville, Florida
- Warren and Waitsfield, Vermont
- Las Vegas, Nevada.

Location: Brisbane, Australia

Photo:



Size/Shape: The idea is derived from the 4'0" wide Denver arrow, but instead Brisbane adopted a 1200-1500 mm wide yellow bicycle symbol as shown above.

Color: Yellow (was considered an advisory color; distinguishable from the mandatory white bike lane symbols also in use)

Material: Paint

Source: Michael Yeates, Convener, Cyclists Urban Speed limit Taskforce, An initiative of the Bicycle Federation of Australia Inc
ph +61 7 3371 9355, michaelm@myoffice.net.au ,
www.yeatesit.biz/transfiles/bfaurbanspeedlimits.pdf

Other Sources: Bicycle Federation of Australia. Associated report "Towards A Safe Urban Speed Limit: Report Of The Cyclists Urban Speed Limit Task Force": www.bfa.asn.au/cyclist/201speed.htm
City of Brisbane, Australia. "Making Space For Cyclists By Sharing The Road: Brisbane City Council's "Bicycle Friendly Zone" report:
www.brisbane.qld.gov.au/getting_around/bikes/bikeways/signs.shtml
www.ourbrisbane.com/brisbane/traffictans/bicycles.htm

How Used: A yellow bike symbol system has been under development on Brisbane streets since 1995. They are called Bicycle Friendly Zones (BFZ). On existing roads where there is not enough space to provide a bike lane, BFZs are created to alert motorists of "the likely travel corridor for bicyclists". These zones are marked with a yellow bicycle symbol that warns other road users that cyclists commonly use the route. The intention is to clearly delineate the parking

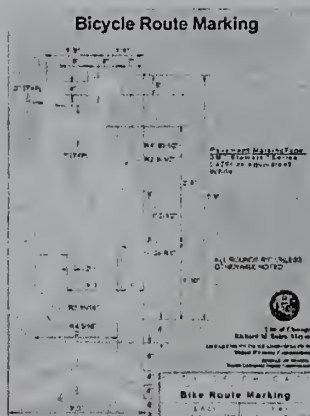
areas so that the areas between the parked vehicles and the through traffic can be utilized by cyclists. The reduced speed (50km/h) and the bike symbols show where cyclists are expected. The yellow symbols are placed (using standard road-marking stencils) 1800-2000 mm from the curb where parking is allowed, and closer to the curb where there is no parking. On single lane roads where edge lines are installed, the lines are regularly broken to accommodate the yellow bike symbols (see photo). In all cases, the symbols are repeated at regular intervals on the road.

According to the Bicycle Federation of Australia, the major benefit of the BFZ is adaptability. It can be used to "make room for the cyclists" in combinations of lower speed areas in areas such as shopping strips to reduce traffic speed by integrating all relevant urban design elements. Used in various combinations, it preserves space for cyclists without "separation", an example of "sharing the road". From a technical perspective, correct placement of the BFZ allows its use on roads that, if bike lanes were used, would require widening traffic lanes that, according to traffic design theory, results in increased speed of the adjoining traffic. The development and use of the BFZ illustrates the relationship between speed limits, speeding, perceptions of safety and provision of facilities. Despite not being able to reduce the speed limit on main roads from 60 to 50km/h, reduced traffic speeds when cyclists are present have been achieved by use of the BFZ.

Effectiveness: Brisbane's use of the bike symbols has been an ongoing "trial" without any specific evaluation processes. To see if the concept worked intuitively or subjectively, no education was provided before or after the installation of the symbols. Michael Yates believes that they appear to be working intuitively and no negative effects have been identified.

Location: Chicago, Illinois

Photo:



Size/ Shape: 5' 9" high by 3' 3" wide bicycle above 1' 8" high by 3' 3" wide double chevron. Randy Neufeld modeled it after a design photographed in Paris a couple of years ago by a Chicagoland Bicycle Federation member. (Bike-in-House symbols previously installed in 1999 were considered too small to be understood by cyclists.)

Color: White

Material: They upgraded their symbols to an intersection grade quality material in 2002. In general, their 3M thermoplastic symbols have lasted 5 years or more, depending on wear.

Source: Nick Jackson, Director of Planning, Chicagoland Bicycle Federation
(312) 427-3325 x 27, nick@biketraffic.org

How Used: The symbol has been used by the Chicago DOT Bike Program in two places for shared lanes, both short connections between bike lanes. It is also planned for use in conjunction with directional signage to lead cyclists across large intersections to a facility in an area where many cyclists ride on the sidewalk.

Effectiveness: unknown at this time

Location: Oakland, California

Photo: Not available

Size/ Shape: Not available

Color: White

Material: Paint

Source: Kathryn Hughes, City of Oakland Public Works Agency, Transportation Services Division
ph 510-238-6493, khughes@oaklandnet.com

How Used: White bike stencils were placed on a shared-use connecting link between two bike lanes on Grand Avenue in Oakland. The project is called the Grand Avenue Commuter Bikeway. The bike lanes extend from El Embarcadero to Webster, then the stencils/shared lane from Webster to Broadway, and bike lanes from Broadway to Market. SG 45 signs were also installed on the entire route and Share the Road signs on the stenciled portion.

Effectiveness: unknown at this time

Location: Denver, Colorado

Photo:



Size/ Shape: Bike-in-a-house design (the original, designed by James Mackay), 4' 3" long x 4' 0" wide, with a left-bound cyclist

Color: White

Material: One of the reasons for the "Bike in the House" symbol was to reinforce the correct direction of travel. Additionally, there was a desire to reduce the typical pavement marking costs of bike lanes. The original symbols were painted, but since the paint abraded away quickly from winter sanding operations, they have been replaced with thermoplastic solid outlined symbols as shown above (cost is \$50 each).

Source: James Mackay, P.E., Denver Bicycle Planner, 201 West Colfax Avenue, Department 509, Denver, CO 80202, ph 720-865-3171, fax 720-865-2676, James.Mackay@ci.denver.co.us
http://www.denvergov.org/Bicycle_Program/59810116template3jump.asp

How Used: As part of Denver's 1993 Bicycle Master Plan development, a "Shared Use Lane Pavement Marking Arrow", commonly called the "Bike in the House", was designed. The symbols are used in shared use lane conditions where bike lanes are not provided, but where it is desired to define the likely travel corridor for bicyclists. Symbols are placed approximately every 180 feet on-center along roads, often with "Share the Road" signs. They are placed so the center of the arrow is 9' 6" off the curb line with an adjoining 7 foot parking stall.

Effectiveness: Not available

Location: Cambridge, Massachusetts

Photo:



Size/ Shape: Bicycle stencil placed in a break of a continuous white line

Color: White

Material: Paint

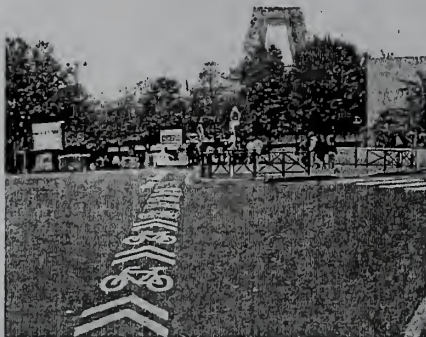
Source: Cara Seiderman, cseiderman@Spike.Cl.Cambridge.MA.US
Wayne Amaral, Cambridge Traffic Department, (617) 349-4723
Bryce Nesbitt, Bicycle Committee member, bryce2@obviously.com

How Used: Pavement markings have been installed on Mt. Auburn Street in Cambridge. The travel lane is 11 feet and the guideline is 10' out from the curb.

Effectiveness: No formal study completed yet, but these comments were passed on:
 "I find this lane treatment highly appropriate for intermediate width streets (too narrow for a full bike lane, too wide for cyclists to take the entire lane). In particular I find:
 "1. It seems to keep cyclists out of the door zone. Cyclists ride within inches of the line.
 "2. Motorists don't seem to get mad when a cyclist deviates from the line. With conventional double-stripe bike lanes, motorists often seem to insist that bikes stay within the bike lane. This does not happen on Mt. Auburn."

Location: Paris, France

Photo:



Size/ Shape: Similar to the Chicago, IL symbol (5' 9" high by 3' 3" wide bicycle above 1' 8" high by 3' 3" wide double chevron)

Color: White

Material: Thermoplastic

Source: Marc Jolicoeur, Research Coordinator, Velo Quebec
 tel.: (514) 521-8356 #394, fax: (514) 521-5711, marc_jolicoeur@velo.qc.ca

How Used: The city of Paris is using arrows and bike symbols repeated along the line of travel of cyclists in intersections, about the same way colored lanes have been used in Portland and Montreal.

Effectiveness: unknown at this time

Location: Portland, Oregon

Photo:



Size/ Shape: Standard markings for inside bike lane

Color: White

Material: Thermoplastic

Source: Mia Birk, Principal, Alta Planning + Design, 144 NE 28th Avenue, Portland OR 97232
 ph (503) 230-9862, fax (503) 230-9864, cell (503) 238-4745, miabirk@altaplanning.com

How Used: Portland used the bike lane marking without the bike lane line in one case in February 1998. This case involves a street with bike lanes that lead up to a 26' wide bridge, on which there is not adequate room for bike lanes. The city retained the marking on the outer 3' of each of the

13' lanes to encourage motorists to travel toward the left of the lane.

Effectiveness: No specific study. Anecdotal evidence suggests that motorists are indeed giving cyclists room: the markings are still there after almost five years of application and show little signs of motorists' driving on them.

Location: Gainesville, Florida

Photo:



Size/ Shape: bike-in-a-house, 4' 0" wide x 6' 0" long

Color: White

Material: Paint

Source: Dennis Scott, Florida Pedestrian and Bicycle Coordinator
ph (850) 410-4927, dennis.scott@dot.state.fl.us

How Used: Their shared-use arrow was intended to address deficiencies in wide outside curb lane bike facilities. The wide curb lanes are frequently not recognized as a facility by bicyclists. The shared-use arrow informs the cyclists about where to ride and in which direction. The symbols were put down as part of a November 1999 usage evaluation, performed by the University of North Carolina Highway Safety Research Center (HSRC), to compare the riding positions of bicyclists and the position of motorists on sections marked with the shared-use arrow to unmarked sections.

The arrow was placed by Gainesville Public Works at 3.5 feet from the curb face at four locations along 13th Street (US 441). In this study area, 13th Street has 4 lanes, a 30 mph speed limit, and carries approximately 35,000 vehicles per day. The four locations were examined using videotaping equipment to record bicycles and motor vehicles.

Effectiveness: For this evaluation, the measures of effectiveness pertained to before and after measurements of bicycles and motor vehicles from the curb and from each other. Bicycle to Curb was the only measurement that showed a statistically significant difference between the BEFORE and AFTER conditions. Although the difference between the BEFORE mean measurement of 1.58 feet and the AFTER of 1.83 feet was statistically significant, this .25 feet (1.83 - 1.58), or 3 inches, is not practically significant. This does not represent enough of a meaningful shift in distance for real world application. Furthermore, this amount may fall within the measurement error of the software/data reducer, especially considering that BEFORE measurements were made with the bicyclist farther from the camera. More trials in other locations are recommended and should result in more conclusive findings.

Location: Warren and Waitsfield, Vermont

Photo: Not available

Size/ Shape: Bike-in-a-house design (4' x 4' approximately – some maybe smaller due to narrow shoulders of 3' or less)

Color: White

Material: Paint

Source: Amy Bell, Vermont Bicycle and Pedestrian Coordinator, ph (802) 828-5799

How Used: Symbols were placed experimentally along the shoulders of a scenic tourist 4.5 mile stretch of US Route 100. Share the Road signs were installed with the pavement symbols. The symbols have not been replaced since their first application, and many are worn away, covered over or scraped off from winter equipment. The signs are still in place.

Effectiveness: No specific study. Casual verbal survey of approximately 200 local citizens and 50 bicyclists led to conclusion that bicyclists felt the symbols were too small to be effective and local drivers rarely noticed them. The Vermont DOT decided to not encourage their use, to not replace them, and to not include them in future plans

Location: Las Vegas, Nevada

Photo: Not available

Size/ Shape: MUTCD standard bicyclist and arrow symbol
Color: White
Material: Retroreflective film with glass beads
Source: Mike Colety, P.E., Kimley-Horn and Associates
 ph (702) 862-3609, fax (702) 735-4949, mike.colety@kimley-horn.com
How Used: Pavement stencil markings are only used with bicycle lanes (not shared lanes)
Effectiveness: Not available

Location: **Sacramento, California**

Photo: Not available

Size/ Shape: Not available

Color: White

Material: Paint

Source: Ed Cox, Alternative Modes Coordinator, City of Sacramento,
 ph (916) 264-8434, fax (916) 264-8357, ecox@cityofsacramento.org

How Used: For several years Sacramento has been using a painted arrow and legend that says "Bike Route". It is almost identical to markings used for bike lanes (Highway Design Manual figure 1004.3) that says "Bike Lane". Sacramento's symbols are used for streets that are on their Bikeway Master Plan, primarily on Class 3 routes where they are combined with the Green and White Bike Route signs (California State Department of Transportation, Caltrans, G93). They have also put them on streets where it was not possible to install Class 2 bike lanes.

Effectiveness: No study. They do provide route guidance to bicyclists.

Other Locations



Freiburg, Germany



Buenos Aires, Argentina



San Anselmo, California

2. Network Improvement Document



GAVIN NEWSOM, MAYOR
BOND M. YEE, ACTING EXECUTIVE DIRECTOR

**SAN FRANCISCO BICYCLE PLAN: NETWORK IMPROVEMENT
DOCUMENT
AND
PROPOSITION K 5-YEAR PRIORITIZATION PROGRAM**
Category: C.iv.b Bicycle Circulation/Safety

DRAFT APRIL 2005

Prepared for the
San Francisco County Transportation Authority

Prepared by the
Department of Parking and Traffic
Traffic Engineering Division



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1.0 Introduction

In November 2003, San Francisco voters approved Prop K, reauthorizing the ½ cent sales tax for transportation improvements and approving a new 30-year Expenditure Plan. The Expenditure Plan determines eligibility for Prop K funds through a list of specific projects (e.g. Central Subway) and programs (e.g. pedestrian circulation/safety and signals and signs). It also sets caps for the maximum amount of Prop K funds that will be available for specific projects and programs over the next 30 years, totaling an estimated \$2.82 billion. In order to fully fund the projects and programs, the Expenditure Plan assumes that the Prop K dollars will leverage (or match) another \$9.6 billion in other federal, state, regional, and local funds. Some of those leveraged funds will be available to San Francisco through funding allocation formulas. The City will have to compete for non-formula (discretionary) funds.

The Expenditure Plan includes a number of requirements, including the development of 5-Year Prioritization Programs as a condition for receiving allocations in each programmatic (i.e., not project-specific) category in the Expenditure Plan. This requirement applies to about 20 programs such as street resurfacing, new signals and signs, traffic calming, and transit enhancements.

The Prioritization Programs are intended to provide a stronger link between project selection and expected project performance, and to support on-time, on-budget project delivery, and timely and competitive use of state and federal matching funds. Specifically, the purpose of the Prioritization Programs is to:

- Establish a clear set of criteria for prioritizing projects,
- Improve agency coordination at the earlier stages of the planning process,
- Allow and ensure public input early and through the planning process, and
- Establish performance measures.

The ideal outcome of the Prioritization Programs is the establishment of a strong pipeline of grant-ready transportation projects that can be advanced as soon as funds (including Prop K, federal, state, and other funds) are available so that the Expenditure Plan can be delivered in a timely and cost effective manner.

Process for Developing Prioritization Programs

This first round of Prioritization Programs covers the five-year period from FY 2004/05 through FY 2008/09. The Prioritization Programs will be updated every three years, in concert with triennial updates of the Prop K Strategic Plan. The Prop K Strategic Plan is the financial tool that guides the timing of allocation of Prop K revenues. The Strategic Plan also



sets policy and provides guidance for the administration of the program, ensuring prudent stewardship of the funds. Finding a balance between the availability of funds and project delivery is an iterative process that requires both examining policy and a functional analysis of department capabilities and fund leveraging opportunities.

The Expenditure Plan established limits on funding and described the types of projects that are eligible for each of the 20 programmatic categories, but did not detail specific projects for funding within each category. While the Strategic Plan provides the long-term road map for managing Prop K revenue, the 5-Year Prioritization Programs ensure that the Authority Board, project sponsors, and the public have a clear understanding of how projects are prioritized for funding within each particular programmatic category.

In cases where a particular programmatic category has multiple potential projects sponsors, the Authority Board designated a lead agency to coordinate the development of the Prioritization Program. The lead agency role is one of facilitator and coordinator, not a veto role.

C. STREETS AND TRAFFIC SAFETY

iii. SYSTEM MAINTENANCE AND RENOVATION

c. Pedestrian and Bicycle Facility Maintenance

Public sidewalk repair and reconstruction citywide. Additional pedestrian facility improvements including stairways, retaining walls, guardrails and rockfall barriers. Upgrades of substandard bicycle lanes; rehabilitation of bicycle paths, and reconstruction of MUNI passenger boarding islands. Includes project development and capital costs. Sponsoring Agencies: DPT, DPW, MUNI. The first \$17.4M is Priority 1 and the remainder is Priority 2. Total Funding: \$36.8M; Prop K: \$19.1M.

iv. BICYCLE AND PEDESTRIAN IMPROVEMENTS

a. Traffic Calming

Programmatic improvements to neighborhood streets to make them more livable and safe to use for all users – pedestrians, cyclists, transit, and autos.

Includes strategies to reduce auto traffic speeds and improve pedestrian and bicyclist safety and circulation such as: improvements to bicycle and walking routes (e.g. sidewalk widening, streetscape upgrades including

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Page 16 of 21 landscaping), speed humps, corner bulb-outs, chicanes and channelization (Priority 1). New or improved pedestrian safety measures such as ladder crosswalks and pedestrian signals (Priority 1). Development of neighborhood and school area safety plans



citywide, including abovementioned strategies and complementary outreach and education programs (Priority 1). New traffic circles, signals and signage including flashing beacons and vehicle speed radar signs (Priority 2). The first \$60.8M is Priority 1. The next \$7.2M is Priority 2 and the remainder is Priority 3. Includes planning, project development and capital costs. Sponsoring Agencies: DPT, DPW. Total Funding: \$142.0M; Prop K: \$70.0M.

b. Bicycle Circulation/Safety Programmatic improvements to the transportation system to enhance its usability and safety for bicycles. Infrastructure improvements on the citywide bicycle network, such as new bike lanes and paths. Bicycle parking facilities such as bike racks and lockers. Support for bicycle outreach and education programs. Improvements must be consistent with the city's bicycle plan. The first \$27.6M is Priority 1. The next \$2.4M is Priority 2 and the remainder is Priority 3. Includes project development and capital costs. Sponsoring Agencies: DPT, DPW, BART, PCJPB. Total Funding: \$77.6; Prop K: \$56.0M. \$33.6M; Prop K: \$20.0M.

THE BICYCLE PLAN: POLICY FRAMEWORK AND NETWORK IMPROVEMENT DOCUMENT

There are two major parts to the Bicycle Plan: the Policy Framework and the Network Improvement Document..

POLICY FRAMEWORK

The Policy Framework provides an overview of the policies and components of a successful bicycle program including education, outreach, enforcement and bicycle parking. The goals and objectives (listed in the Executive Summary) for the Policy Framework are based on the goals and objectives in the 1997 San Francisco Bicycle Plan. These updated goals and objectives reflect the City's commitment to improving the quality of life of its residents and expanding the role and importance of bicycle transportation in the City of San Francisco. The goals and objectives were developed and refined based on comments from City staff from numerous departments, the San Francisco Bicycle Coalition (SFBC), the Bicycle Advisory Committee (BAC) and the public. Chapter 2 of the San Francisco Bicycle Plan: Policy Framework outlined the potential projects that will be further developed in the Network Improvement Document.

For more information regarding the Policy Framework, please refer to www.bicycle.sfgov.org



NETWORK IMPROVEMENT

Building on the "Network Blueprint" outlined in Chapter 2 of the Policy Framework, the Network Improvement Document lists "the gaps" of the Bicycle Route Network that have been identified by the public and San Francisco agencies through an involved public process. The Network Improvement Document provides a narrative of the entire Bicycle Route Network; identifies potential improvements; lists generalized opportunities and constraints; lists planning level cost estimates; and provides a prioritization process of when Bicycle Route suggestions should be explored. This document examines issues that need to be resolved prior to project funding, such as the need for demonstrated public support or mitigation of impacts as identified through the environmental review process.

APPROVAL, IMPLEMENTATION, AND INCORPORATION WITHIN THE BICYCLE ROUTE NETWORK

Once the Network Improvement Document is completed, it will be presented to the Municipal Transportation Agency (MTA) Board for approval. The projects identified in the Network Improvement Document will still require environmental review and approval by the BOS prior to implementation. Please refer to the Generalized Steps for Bicycle Facility Implementation found within the Policy Framework, Chapter 2, or on the web at www.bicycle.sfgov.org

The Network Improvement Document should be periodically updated to reflect current changes in funding or Bicycle Route Network priorities. Additionally, periodic updates to the Planning Commission should be undertaken to ensure that the Bicycle Route Network referenced within the Policy Framework, and incorporated in the San Francisco General Plan is up-to-date and accurate.



2.0 PUBLIC OUTREACH

One of the purposes of this 5-Year Prioritization Program is to offer an early opportunity for the public to provide meaningful input regarding the projects that will be funded by Proposition K programmatic categories in the next 5 years. The first public meeting on the overall Bicycle Plan Update was held in February 2003. It kicked off a series of public meetings during the Spring of 2003 that discussed the overall Plan, but focused on potential network improvements and the Supplemental Design Guidelines. (The Supplemental Design Guidelines can be found in the appendix of the San Francisco Bicycle Plan: Policy Framework). These meetings were cosponsored by the SFBC, whose participation was funded by a Caltrans community planning grant focused on public outreach for potential network improvements.

By early 2004, the SFBC began outreach to hundreds of individual community groups, seeking input and comments on the “top priority project” concepts¹ that were developed by the consultants. The SFBC then held five highly advertised citywide meetings through the spring of 2004, again focusing on network improvements that were developed by the consultants.

This process involved a high level of public participation. The SFBC’s extensive public outreach resulted in:

- A series of citywide and neighborhood-specific workshops to solicit suggestions for improving the Bicycle Route Network;
- Surveys designed to solicit City residents’ input on potential Bicycle Route Network improvements, network maintenance needs, bicycle parking needs, and policy and program needs;
- Follow up workshops to present proposed network improvements to the neighborhoods; and
- Extensive citywide outreach on specific project proposals to solicit input from merchants, neighborhood groups, and generally interested citizens.

This process involved about 5,000 comments resulting in over 2,800 specific street improvement suggestions, and nearly 2,000 comments related to bicycle policy improvements in San Francisco. The SFBC outreach efforts and summaries can be found in Appendix 9b.

¹ Summaries of the SFBC’s work and the Consultant’s work can be found in the Appendix of this document.



The Authority hosted two public workshops to seek input on the 5-Year Prioritization Programs, one in November 2004 and one in February 2005

In addition, DPT Bicycle Program will present this prioritization program to the Bicycle Advisory Committee (BAC) and its oversight commission, the Municipal Transportation Agency (MTA) Board.

3.0 PRIORITIZATION CRITERIA

The Prop K Expenditure Plan requires that the 5-Year Prioritization Programs include a prioritization mechanism to rank projects within the program. The intent of this requirement is to provide the Authority Board, the public, and Prop K project sponsors with a clear understanding of how projects are prioritized for funding within a particular programmatic category. Having a transparent and well-documented prioritization methodology in place allows for an open, inclusive and predictable project development process, that will hopefully result in a steady stream of projects that are ready to compete for Prop K and other implementation funding. It also offers an opportunity to take advantage of coordination opportunities with other transportation projects funded by Prop K, and with other funding sources that should result in efficiencies and minimize disruption caused by construction activities.

Public input from the first series of public meetings mentioned above was utilized to generate a list of potential Bicycle Route Network improvements. This list was combined with other existing project lists (remaining recommendations from the 1997 Plan, projects previously recommended by bicycle advocates or members of the public, and improvements recommended through DPT staff analysis). By mid-summer 2003, a prioritization matrix (Table 3.1) was created and applied to rank this combined recommended project list.

These were ranked by members of a Technical Advisory Committee (Table 3.2) which then:

- assembled all individual project rankings and averaged them per project;
- selected the top 50 ranked projects,
- mapped the top 50 projects using GIS,
- grouped projects by corridor and geographic area, and
- adjusted for regional equity and came to an agreement among TAC members of approximately 20 potential projects that a consultant team would further develop.

TABLE 3.1 Prioritization Ranking Criteria

San Francisco Bike Projects - Ranking Criteria June 3, 2003 Version <i>Disclaimer Note: these draft rankings are not meant as an indication of their relative importance only. The goal will be to develop three tiers of project priorities so that the City may apportion available funding to the highest priority projects. Medium and long-term projects should also be considered important. In fact, some medium and long-term projects may be implemented as part of a development or public works project. The ranked lists should be considered a "living document" and should be frequently reviewed to ensure they reflect current San Francisco priorities.</i>			
Project scores should be based on the information obtained from site visits and field work. City staff, and from the public			
Ranking Criteria	Point Range	Max points	
Land Use			A project that provides or promotes connections or access to multiple land uses (e.g. primary generators such as dense residential neighborhoods with high numbers of bicycle commuters with areas of dense employment) will rank favorably according to the land use criteria. Facilities that provide intra- or inter-neighborhood access for shopping trips, access to transit, access to public open space/parks would also rank favorably according to the land use criteria. Longer corridor projects that "connect" more land uses will tend to rank higher as they are assigned greater points over shorter projects that do not.
Current Bicyclist Demand	0 to 10	10	Higher points for those projects that currently have significant usage, based on land uses, population, corridor aesthetics, etc. Justification for this criteria is that corridors or spot locations currently receiving high demand may or may not be optimally designed and additional improvement would benefit a large number of existing
Latent Bicyclist Demand	0 to 10	10	Higher points for those projects likely to generate significant usage, based on land uses, population, corridor aesthetics, etc. If safety or functionality is improved, even high use facilities may increase in use levels.
Regional Equality	0 to 10	10	Higher points for areas without a bikeway project within last 5 years, areas that are poorly served by transportation options, areas with higher concentration of economically-disadvantaged residents
Technical ease of Implementation	0 to 5	5	Fewer points for large engineering structures, difficult intersections, etc. Because we may not know the specifics of the projects until it is designed, this number may be adjusted to reflect changed assumptions regarding the preferred engineering solution for the project. Technical ease of implementation focuses on the actual engineering challenges of a project, emphasizing the point that typical physical requirements of San Francisco bicycle projects such as parking removal, traffic lane removal, or lane restriping are not technically challenging from an engineering perspective. Physical solutions are often readily apparent but may require development of political support, addressed under "Political Ease of Implementation," or that specific operational issues be addressed specifically to demonstrate that no negative impacts will occur to other modes, addressed under "Multi-Modal." This criteria addressed specifically the technical, physical aspects of the engineering solution.
Political ease of Implementation	0 to 10	10	Maximum points are assigned for an easy, popular project. If significant neighborhood opposition is a known factor, if support of local elected official is not anticipated, or if other political opposition to a particular aspect of the assumed engineering solution is anticipated then the project receives fewer points under this criteria. NOTE: Projects that are supported by current or adopted planning efforts by Federal, State, regional or local agencies should receive points under this criteria. In addition, projects that are supported by existing or anticipated funding should receive points under this criteria.
Overcomes Barrier/Connectivity	0 to 10	10	Maximum points should be assigned to recommended facilities that would address a major safety concern for bicyclists using bridges, interchanges, and other environments difficult for bicyclists to navigate. Higher points should be assigned to roadways with high speed, high traffic volume, wide road width, difficult intersections or other obstacles to bicycle travel.
Multi-Modal	0 to 15 -10 to 5	15 5	Max points for projects that benefit other modes, especially transit and pedestrians. Up to -10 (negative ten) points for project that would harm transit operations. When assessing potential negative impact to transit operations (bus, most specifically) it is necessary to assess potential impacts to lines operating on the specific street in question, as well as adjacent/parallel corridors. In order to capture all potential impacts that may result to lines that operate on multiple streets, NOTE: Benefits to pedestrian circulation/street crossings as a result of narrowing or removing travel lanes/adding bicycle lanes should be considered a multi-modal benefit. To the extent possible at this coarse level of analysis, thought should be given to the following pedestrian safety factors including: crossing distance, crossing visibility, assumed changes to signal timing, etc.
Lack of Parallel Facilities Within 1/4 Mile (1300 ft)	0 to 10	10	Max points for project that has no parallel bikeway within 1000 ft. Five points for a parallel but not ideal bikeway. Zero points if excellent parallel bikeway within 1300 ft.
Public Input			The "Total Requests" column in the prioritization worksheet is based directly on public input received via the Bicycle Plan Update Neighborhood Public Workshops and surveys. The "Total requests" for each project identified in the public outreach process are based on the following methodology developed by SFBC: (1) Small Group Workshop Priority Lists: 1st priority = 4 points, 2nd priority = 3 points, 3rd priority = 2 points; and, (2) Survey respondent total points per project. For this prioritization exercise, projects are ranked under the "Public Input" criteria as follows: (1) Projects receiving greater than 50 requests receive 5 points; and, (2) Projects receiving fewer than 50 requests are grouped as follows: 49-40 Total requests=4 Pts, 39-30 Total requests=3 Pts;
Total Points	0 to 10	10	95



Table 3.2

Agency Members of the Technical Advisory Committee (TAC)

Association of Bay Area Governments - Bay Trail (ABAG)
Bay Area Air Quality Management District (BAAQMD)
Bay Area Rapid Transit (BART)
Department of Public Works (DPW)
Golden Gate Park Concourse Authority
National Park Service
Planning Department
Police Department
Port of San Francisco
Presidio Trust of San Francisco
Recreation and Park Dept.
Redevelopment Agency
SF Bicycle Advisory Committee (BAC)
SF Bicycle Coalition (SFBC)
SF County Transportation Authority (SFCTA)
SF Department of Parking & Traffic (DPT)
SF Fire Department
SF Municipal Railway (Capital Planning)
SF Municipal Railway (Service Planning)
Treasure Island Development Authority

The top ranking projects were billed the "top priority projects" for the consultant team to work on; and their work on these projects can be found within Appendix 9a. . Subsequent ranked projects were then divided into groups (short, mid term, and long term) dependant on the averaged rank, adjusted for regional equality. These were then compared to the Department of Public Works Paving Schedule, and attempts were made to match fiscal years of project implementation to proposed repaving. Additionally the "short", "mid" and "long" term ranking was applied, respectively placing those projects that were not on the paving schedule into fiscal years 1-2,2-4, and greater than 5 years.



Once placed into a fiscal year group, the fiscal constraints² of Proposition K were consulted and a project's placement into a particular fiscal year was adjusted so that the total requests for Proposition K funding did not exceed the allowable debt. An agency prioritization comparison was then undertaken, to further adjust and maximize project delivery through the referencing of other Proposition K projects categories. Table 3.3 reflects this prioritization.

The following tables (3.4, 3.5, and 3.6) are the potential projects that have been identified through the Bicycle Plan Update process. This Document will further specific recommendations along specific corridors and will prioritize when funding should be sought for specific projects.

² Ideally Proposition K projects will not exceed 1/30 of the total category allotment per fiscal year. Proposition K is a 30 year plan, therefore, 1/30 would equal one fiscal year. If project sponsors are willing to pay for interest and fees against that subcategory's limits, then the 1/30 amount can be exceeded.

She also confirmed that if we spent less than 1/30 last year, we can take the "surplus" and use it in next 5 years, as Manito had suggested. Manito and I are planning to do this.



4.0 PERFORMANCE MEASURES

Prop K requires the establishment of performance measures for each programmatic category in the Expenditure Plan. The intent is to demonstrate the system performance benefits of sales tax projects (e.g. reduced transit travel time) and to use the results to inform future project development, allocation of Prop K funds, and programming and prioritization of other funds by the Authority (e.g. Transportation Fund for Clean Air, state Regional Improvement Program funds). The performance measure data will also be critical to support and justify future sales tax reauthorizations, as well as other efforts to identify new revenue sources for transportation projects.

Specific Project Performance Measures

A. Conceptual Planning Projects

These projects are intended to vet the issues of multiple design concepts to the point where they can be evaluated. The concept that survives this evaluation process, can lead to more detailed engineering designs. The purpose of Conceptual Planning and Design is to deliver projects to a funding agency with a well-defined need and a recommended concept.

Projects that are identified as Conceptual Planning Projects will be measured by the completion of a needs and feasibility report.

B. Corridor Planning Projects

These projects were identified within the San Francisco Bicycle Plan: Policy Framework as requiring additional study at the corridor level. These projects may trigger extensive environmental review and must be addressed in a much broader planning context, due to the complexity of the projects and the involvement and responsibilities of numerous City agencies and other jurisdictions.

Projects that are identified as Corridor Planning Projects will be measured by the completion of an Action Plan, similar to that completed by SFCTA for Market Street.

C. Preliminary Design And Engineering Projects

These projects will refine actual design of bicycle improvements. Sufficient engineering will be undertaken to determine whether the project concept can feasibly evolve into an actual project in light of environmental and community constraints and issues. Environmental review should begin at this step. During this phase, a project concept could be determined as being "fatally flawed" due to further analysis, with less obvious, but critical details coming to light. The project could end here or return to the conceptual planning and design phase.

The Performance measure for this type of project will be a report detailing:

- Environmental Review
- Detailed traffic analysis



- Refined Cost Estimates
- Striping drawing proposals
- New traffic signal timing cards

D. Design and Engineering Projects

At this stage, the concept has become an actual “facility improvement” and could begin working its way through the San Francisco legislative process. Striping drawings and new traffic signal timing cards are modified based upon the staff analysis, public comment, and environmental review. More refined cost estimates and timelines are generated, including Plans, Specifications, and Estimates (PS&Es). **The Performance Measure for Design and Engineering Projects will be the completion of “before and after” bicycle use counts once the Final Design and Engineering³ is completed and the facility improvement is implemented.**

Programmatic Performance Measures

The unique nature of bicycle projects and bicycle transportation does not easily lend itself to be solely based on project specific performance measures. Improvements along one street or corridor may still leave gaps throughout the larger bicycle system. (ie. if bicyclists do not have a place to safely park a bike at the end of their trip, or if they have a safe place to park, but can not bike to their desired destination, then the improvement in itself, does not speak to the overall performance of the bicycle program and system) To account for the overall improvement for bicyclists, a programmatic review should also be undertaken. In addition to the specific measures listed above, an indicator on the overall state of bicycle transportation should also be considered, to assist in achieving the overall goal stated in the Bicycle Plan: Policy Framework, “Make bicycling an integral part of the daily life in San Francisco”

The following are Programmatic Performance Measures that should be carried out every other year

- Overall increase of bicycle facilities
- Increase of trips by bicyclists to work⁴

³ Final Design and Engineering is when the final edits of a striping drawing, or signal timing are made. Environmental review should have occurred by this point and the legislative process should be complete. Changes to the final design could occur based upon recommendations that come out of the public input in the legislative process. A work order is submitted to DPT Paint or Sign Shops; or DPW Construction. (A Work Order can only be generated for bike lane projects if it has been approved by the BOS through a resolution. The BOS can only pass bike lane legislation if the environmental clearance has occurred on a particular project concept.)

Please refer to the Generalized Steps for Bicycle Facility Implementation found within the Policy Framework, Chapter 2, or on the web at www.bicycle.sfgov.org

⁴ MTC Commuter Profile.



- Decrease in bicycle related collisions (five year review)⁵
- Bicyclists Survey (every two years)⁶
- Address Action items within the San Francisco Bicycle Plan: Policy Framework

⁵ For trends to be adequately reviewed, five year window should be utilized when reviewing collision information. This will

⁶ A model of this survey should be based on the City of Copenhagen's Bicycle Account <http://www.vcipark.kk.dk/byenstraftik/cyklernesby/uk/bicycleaccount2002/> The purpose of a San Francisco survey would be to gauge the effectiveness of the multiple bicycle improvements and measures funded by Prop K. Survey topics could include bicyclists' views on topics such as maintenance, bicycle parking, and safety education. An estimated \$5,000 every other year should be set aside for this performance measure.



5.0 FUNDING

TABLE 5.1

Bicycle Route Network Improvements, by Street Name

TABLE 5.2

Bicycle Route Network Improvements, by Bicycle Route Network Number

TABLE 5.3

Bicycle Route Network Improvements, by Fiscal Year



6.0 PROGRAM OF PROJECTS

The following pages contain a description of the entire Bicycle Route Network, including potential network improvements that have been identified and ranked through the planning process described in "Public Outreach & Prioritization Criteria". The Bicycle Route Network narratives are listed in numeric Bicycle Route Network order. For consistency, the entire Bicycle Route Network has been retained within the narrative. Please consult Tables 5.1, 5.2, and 5.3 to cross reference projects. For some routes, no immediate improvements have been directly identified, while other routes contain segments that were identified as a "top priority projects". Conceptual Design options were developed for "Top Priority Projects" (Table 6.1) and can be found in Appendix 9a.



Table 6.1 Top Priority Projects

PROJECT NAME	EXISTING ROUTE NUM,	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Second Street	11	1	3	Design and Engineering
Fifth Street	19	1	3	Design and Engineering
Fourteenth Street	30	1	2	Design and Engineering
Sixteenth/Seventeenth Streets Corridor	40/25	4	5	Corridor Planning
19th Avenue	75	3	4	Design and Engineering
Alemaný Boulevard	45	1	4	Design and Engineering
Bayshore Boulevard	5	2	3	Conceptual Planning
Broadway Tunnel	10/210	1	2	Design and Engineering
Cesar Chavez/ 26th Streets Corridor	60	1	6	Design and Engineering
Fell Street and Masonic Avenue Intersection	30	1	4	Design and Engineering
Illinois Street and Illinois Street Bridge	5	1	3	Design and Engineering
Laguna Honda Boulevard	65	1	2	Preliminary Design and Engineering
Upper Market Street, Octavia Boulevard to 17th Street	50	5	6	Preliminary Design and Engineering
Masonic Avenue Corridor	55	4	6	Corridor Planning
Oakdale Street	170/7	1	3	Design and Engineering
Polk Street	25	4	4	Preliminary Design and Engineering
Portola Drive	50	5	6	Preliminary Design and Engineering
Townsend Street	36	2	4	Corridor Planning



Table 5.1 lists Bicycle Network Routes with potential network improvements, promoted by street name; Table 5.2 contains the same information as Table 3.3, except promoted by Route Number; while Table 5.3 is promoted by the application of funds' fiscal year.

In addition to suggestions along the existing Bicycle Route Network, suggestions were also received for segments currently not on the Bicycle Route Network. Conceptual Planning and Design should be developed for these potential projects to determine if they "fill a gap" within the existing Bicycle Route Network.

The most practical time to address these potential new segments is when work is planned by another San Francisco agency. The Department of Public Works' *Five Year Proposed Utility Excavation and Paving Plan* is an excellent starting point for prioritization, for it outlines when streets will be excavated and repaved. A repaving of a street generally also involves a restriping of a street, which is a good time to explore potential bicycle facilities. Planning Level cost estimates have been developed and are included within Tables 5.1, 5.2, and 5.3.

Program of Projects Narrative

ROUTE 2: NORTH BEACH TO THE PRESIDIO

Network Improvement Project Location(s):

- Marina Boulevard, from Laguna Street to Lyon Street
- North Point Street, from the Embarcadero to Van Ness Avenue

Current Route Description:

Northpoint Street/Marina Boulevard/Old Mason Street

This signed route on Northpoint Street begins at The Embarcadero and connects with the existing path along the north edge of Fort Mason via Van Ness Avenue. From Fort Mason, the route connects to Marina Boulevard then continues through the Presidio on Old Mason Street and Mason Street to Crissy Field Avenue. Due to the one-way segment of Crissy Field Avenue, the east and westbound routes then diverge. Westbound, the route continues via Crissy Field Avenue and Lincoln Boulevard to Merchant Road. The eastbound route is via Lincoln Boulevard, Cowles Street, McDowell Avenue, and Crissy Field Avenue. Connections can be made between Lincoln Boulevard and the Golden Gate Bridge walkways via Routes 95, 202 or 295.

Generalized Opportunities:

- Marina Boulevard, from Laguna Street to Lyon Street
 - Fort Mason Planning Efforts can be found at <http://www.nps.gov/goga/admin/planning/pdf/foma-webquality.pdf>. In addition, The San Francisco County Transportation Authority (SFCTA) has applied for funding its planned Northern Waterfront pedestrian/Bicycle Study.
 - Improved bicycle facilities should be considered as part of the Muni E-Line planning efforts currently underway: See both the *Market Street Railway*

(MSR) E-Line at <http://www.streetcar.org/tomorrow/vision/index.html>
and Muni's *A Vision for Rapid Transit in San Francisco* at:
<http://www.sfmuni.com/cms/rptpub/repuindx.htm>.

- This bicycle facility is identified as part of the Bay Trail Network. For more information: www.baytrail.abag.ca.gov.
- This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- North Point Street, from the Embarcadero to Van Ness Avenue
 - Coordinate with Bay Trail Planning Efforts. The current Bay Trail alignment through Fisherman's Wharf is on Jefferson Street, however, Jefferson is one-way and serves only northbound users. The Bay Trail, BCDC and the Port of San Francisco continue to support the implementation of continuous bicycle access through the Fisherman's Wharf area. Consult *Fisherman's Wharf Planning Committee Recommendations—July 2004*
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. Visit the following website for more information: www.mtc.ca.gov.

Generalized Constraints:

- Marina Boulevard, from Laguna Street to Lyon Street
 - Existing paved-over railroad track under existing path has protected historic status and walls at west portal of Fort Mason may also have protected historic status.
 - This project is located along a transit route and transit vehicle operations will need to be considered. Please consult the San Francisco Bicycle Plan: Policy Framework Document's Bicycle and Transit Policy in Chapter 2 for guidance.
 - This project is located in a commercial district. Any parking changes should consider impacts to adjacent property owners.
 - Neighborhood's long history of activism and concern about changes.
 - Potential new light rail E-Line (now under study) connecting Fisherman's Wharf, Fort Mason, and the Presidio. See E-Line: Market Street Railway (MSR) at www.streetcar.org/tomorrow/vision/index.html and Muni's *A Vision for Rapid Transit in San Francisco* at: www.sfmuni.com/cms/rptpub/repuindx.htm.
 - Existing Yacht Harbor parking.
 - Multi-jurisdictional coordination (DPT, DPW, Recreation and Park Department, Port of San Francisco, Golden Gate National Recreation Area, and Association of Bay Area Governments (Bay Trail)).
- North Point Street, from the Embarcadero to Van Ness Avenue
 - Neighborhood's long history of activism and concern about changes.
 - This project is located in a commercial district. Any parking changes should consider impacts to adjacent property owners.

Improvement Options:

- Marina Boulevard, from Laguna Street to Lyon Street
 - From the 1997 Plan, two facilities are recommended.
 - On-street bike lanes should be considered, given the existing curb lane widths between Webster Street and Baker Street. However, due to public support for pedestrian improvements, such as median refuges, there may not be enough street width for bike lanes, these options should be considered in a public forum.
 - Given the high demand for access to the waterfront and an off-street facility, the existing multi-use path just north of Marina Boulevard should be improved through striping and/or widening from Laguna to Baker Streets. A separate bicycle path adjacent to the sidewalk can be provided between Buchanan and Scott Streets. Path widening is needed between Laguna and Buchanan Streets and between Scott and Baker Streets. The existing path from Fort Mason should be widened where it joins Laguna Street. The paths within Fort Mason should be resurfaced and signed as necessary.
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework. Funds should be sought to develop conceptual designs and plans along this corridor.
- North Point Street, from the Embarcadero to Van Ness Avenue
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework. Funds should be sought to develop conceptual designs and plans along this corridor.

ROUTE 4: POLK STREET TO THE PRESIDIO

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

This route provides access for the residents of the Marina to the Presidio, the Golden Gate Bridge, and Route 25 (Polk Street) via Francisco and Bay Streets. From Polk Street, cyclists can access Route 2 (North Point Street), which connects to Route 5 (The Embarcadero) and Downtown. The existing bike lanes on Bay Street from Laguna Street to Webster Streets provide bicycle access north of the Moscone Recreation Center. Francisco Street (Octavia to Polk Street) has been restriped to remove the downhill westbound bike lane and install a more appropriate uphill eastbound bike lane. (There is not enough width for bike lanes in both directions an uphill bike lane is more important as uphill cyclists are traveling more slowly.) West of Lyon Street, this route continues to the Golden Gate Bridge via Lombard Street, Presidio Boulevard, and Lincoln Boulevard.

Generalized Opportunities

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Many stop signs along route east of the Presidio.
- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

ROUTE 5: THE EMBARCADERO AT NORTHPOINT STREET TO THE SAN MATEO COUNTY LINE

Network Improvement Project Location(s):

- Third Street, from China Basin to Cargo Way
- Third Street, from Cargo Way to Bayshore Boulevard
- Bayshore Boulevard, from Third Street to San Mateo County line.
- Illinois Street, from 16th Street to Cargo Way
- Terry Francois Boulevard, from Illinois Street to Third Street
- The Embarcadero Promenade, Northpoint Street to King Street

Current Route Description:

The Embarcadero/Third & Illinois Street Corridor/Bayshore Boulevard

Route 5 is accommodated by on-street bicycle facilities along The Embarcadero. One of San Francisco's innovated design treatments, "Floating Bike Lanes" can be found along portions of The Embarcadero. King Street connects The Embarcadero with the Third Street. Bridge crossing the China Basin channel. Route 5 then continues along Terry A. Francois Boulevard and joins Illinois Street. This route previously followed Third Street, but now follows Illinois Street from Terry A. Francois Boulevard to Cargo Way. *(As part of the Third Street Light Rail Project, the bike route has been moved to Illinois Street. Additional accommodations must be provide on the Third Street Light Rail Vehicles (LRV) to allow bicyclists to bring their bicycles on the LRVs, per the Environmental Impact Report mitigation measures for bicyclists)*

From Cargo Way, Route 5 follows Third Street to Bayshore Boulevard, and Bayshore Boulevard to the San Mateo County line. *(Cargo Way is currently not on the Bicycle Route*

Network. It is scheduled to be studied for potential inclusion within the Bicycle Route Network. Please refer to Route 68.)

Generalized Opportunities:

- Third Street, from China Basin to Cargo Way
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Bay Trail Network. For more information, go to <http://baytrail.abag.ca.gov>.
- Third Street, from Cargo Way to Bayshore Boulevard
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Bayshore Boulevard, from Cesar Chavez Street to the San Mateo County line.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Illinois Street, from 16th Street to Cargo Way
 - See summary Illinois Street Summary Sheet in Appendix 9a
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Terry Francois Boulevard, from Illinois Street to Third Street
 - Bicycle Lanes already exist along Terry Francois Boulevard. This segment will be formally incorporated into the Bicycle Route Network, once the Bicycle Plan: Policy Framework is formally adopted by the City & County of San Francisco.
- The Embarcadero Promenade, Northpoint Street to King Street
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.

Generalized Constraints:

- Third Street, from China Basin to Cargo Way
 - Third Street LRVs
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and

integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- Third Street, from Cargo Way to Bayshore Boulevard
 - Third Street LRVs
 - This project is located along a truck route. Lane widths, truck traffic volumes, and traffic speeds will need to be considered.
 - This project is located in a commercial district. Any parking changes should consider impacts to adjacent property owners.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Bayshore Boulevard, from Cesar Chavez Street to the San Mateo County line.
 - Any design should consider possible Bus Rapid Transit (BRT) along this Corridor Please refer to the Bayshore Boulevard Summary Sheets in Appendix 9a.
 - This project is located along a transit route and transit vehicle operations will need to be considered. Please consult the San Francisco Bicycle Plan: Policy Framework Document's Bicycle and Transit Policy in Chapter 2 for guidance.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Illinois Street, from 16th Street to Cargo Way
 - Please refer to the Illinois Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located near Muni tracks (used to turn LRVs around). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- The Embarcadero Promenade, Northpoint Street to King Street
 - Port of San Francisco Code currently prohibits bicyclists from riding along The Embarcadero Promenade
 - Impacts on pedestrians, especially those on senior citizens or the mobility impaired, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Adjacent property owners and other stake holders need to be consulted. Mills Corporation Pier 27-29 development activity creates specific considerations for this corridor. Loading docks, driveways, and on-street parking impacts need to be considered.
 - This project is located along a truck route. Lane widths, truck traffic volumes, and traffic speeds will need to be considered.

Improvement Options:

- Third Street, from China Basin to Cargo Way
 - Move the Bicycle Route Network from Third Street to Illinois Street. Stripe bicycle lanes along Illinois Street. Please refer to the Illinois Street Summary Sheets in Appendix 9a.
 - This segment was identified as a change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
- Third Street, from Cargo Way to Bayshore Boulevard
 - Install Shared Lane Pavement Marking, “Sharrows”. Explore relocating the Bicycle Route Network along alternative routes through the Bayview and Hunter’s Points neighborhoods.
 - This segment was identified as a change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
- Bayshore Boulevard, from Cesar Chavez Street to the San Mateo County line.
 - Please refer to Route 25 and the Bayshore Boulevard Summary Sheets in Appendix 9a.
- Illinois Street, from 16th Street to Cargo Way
 - This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
 - Illinois Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff has pursued funding to provide bicycle lanes without changing sidewalk widths. This is a combination of several options presented in the Summary Sheets in the Appendix. Additionally, the Port of San Francisco and the Better Neighborhood Plans recommend that bicycle lanes not be striped in front of loading zones. Please refer to the Illinois Street Summary Sheets in Appendix 9a.
- The Embarcadero Promenade, Northpoint Street to King Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework. One improvement that has been suggested is a dedicated Class I facility along the Promenade. Please see next bullet.
 - Explore working with the Port of San Francisco to better accommodate bicycle circulation on The Embarcadero Promenade. Bicycles are not currently permitted on the Promenade, which is under the Port of San Francisco's jurisdiction. If the Port Commission determines that bicycles and pedestrians could be safely accommodated on the Promenade, the Port could revise the Port's Harbor Traffic Code to permit bicycling on the Promenade in the future. To avoid precluding future bicycle use of the Promenade, it is recommended that the amount of clear space on the Promenade be maximized. Installations, such as kiosks and luminaries, should be placed as close to the curb as possible. Given the variety and large number of users of the Promenade, adding

bicycling to the current mix of uses could be problematic for the Port of San Francisco.

ROUTE 6: RUSSIAN HILL TO THE PRESIDIO (VIA GREENWICH)

Network Improvement Project Location(s):

- Greenwich Street, from Lyon Street to Van Ness Avenue

Current Route Description:

Green Street/Octavia Street/Greenwich Street

This route connects Polk Street to the Presidio via Cow Hollow. Access is provided to Route 2 (North Point Street) via: Route 106 (Octavia Street), Route 4 (Francisco Street), and Route 25 (Polk Street). For access to southbound Route 25 (Polk Street), Octavia and Green Streets avoid the steep hill on Greenwich Street between Van Ness Avenue and Polk Street. At the western end, this route connects to Route 4 at Lyon and Lombard Streets, providing access to the Presidio.

- Greenwich Street, from Lyon Street to Van Ness Avenue
 - Limited Muni Service along Greenwich Street (Baker Street to Lyon Street)
 - Expand Bicycle Route Network on Greenwich Street (Van Ness Ave. to Octavia Street)
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Greenwich Street, from Lyon Street to Van Ness Avenue
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - Large number of STOP signs
 - On-Street Parking
 - Topography: Octavia, Gough, Franklin Streets. Van Ness Avenue.
 - One-Way Streets: Gough and Franklin Streets.
 - High Traffic Volume: Van Ness Avenue.

Improvement Options:

- Greenwich Street, from Lyon Street to Van Ness Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore expanding Bicycle Route Network on Greenwich Street (Van Ness Ave. to Octavia Street)
 - Improve Bicycle Route Signage
 - Explore striping bike lanes along Greenwich Street
 - Explore installing Shared Lane Pavement Markings “Sharrows” along Greenwich Street

ROUTE 7: MISSION BAY TO BAYVIEW NEIGHBORHOOD

Network Improvement Project Location(s):

- Indiana Street, from Twenty-Third Street to Cesar Chavez Street

Current Route Description:

Indiana Street/Illinois Street/Phelps Street/Palou Avenue/Keith Street

This route was originally designed to provide an alternative to Route 5 (Third Street) between Mariposa Street and Carroll Avenue. This route provides access to the 22nd Street Caltrain Station. It provides additional inter-route connections and additional neighborhood access, however its necessity should be re-examined after Illinois Street is striped with Bicycle Lanes.

Route 7 begins at Route 5 (Illinois Street) and continues via Mariposa and Indiana Streets to Cesar Chavez Street (Route 60). Southbound cyclists are routed from Indiana Street via 23rd and Minnesota Streets to Cesar Chavez Street.

The route continues east on Cesar Chavez Street to Illinois Street. Illinois Street (Route 5) is used between Cesar Chavez and Phelps Street so that Islais Creek can be crossed via the new Islais Creek Bridge. Route 7 continues via Phelps Street (that also connects Route 68 (Evans Street) with Routes 70 and 170 (Palou Avenue). The route then continues southeast on Palou Avenue to Keith Street and again connects to Route 5 (Third Street) via Carroll Avenue (Route 805). Connections are made here to Route 5 (Third Street/Bayshore Boulevard) to San Mateo County or Route 805 (Carroll Avenue) to 3Com Park.

Generalized Opportunities:

- Indiana Street, from Twenty-Third Street to Cesar Chavez Street
 - Bicycle Lanes along Illinois Street could improve the overall corridor

- Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.

Generalized Constraints:

- Indiana Street, from Twenty-Third Street to Cesar Chavez Street
 - Adjacent property owners and other stake holders need to be consulted. Industrial/ Commercial activity creates specific considerations for this corridor. Loading docks, driveways, on-street parking impacts need to be considered.

Improvement Options:

- Indiana Street, from Twenty-Third Street to Cesar Chavez Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - With the addition of Illinois Street to the Bicycle Route Network, Indiana Street's (from Mariposa Street to Cesar Chavez) necessity should be explored, with potential removal from the Bicycle Route Network

ROUTE 10: THE EMBARCADERO TO SUTRO HEIGHTS

Network Improvement Project Location(s):

- Lake Street, from Third Avenue to Arguello Boulevard
- Pacific Avenue, from Mason to Polk Streets

Current Route Description:

This route provides direct access across the City from The Embarcadero to the Cliff House. Beginning at The Embarcadero (Route 5), Broadway is the flattest route to Webster Street. The Broadway Tunnel, which provides a less challenging grade, presents other challenges. (For more information on See Route 210).

To avoid the Broadway Tunnel, Route 10 follows Pacific Avenue in the eastbound direction from Polk to Mason Streets. The westbound route uses the Broadway Tunnel north sidewalk.

Generalized Opportunities:

- Lake Street, from Third Avenue to Arguello Boulevard
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Pacific Avenue, from Polk to Mason Streets

- This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information:
www.mtc.ca.gov.

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Generalized Constraints:

- Lake Street, from Third Avenue to Arguello Boulevard
 - Parking along Lake Street
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - This project is located along a truck route. Lane widths, truck traffic volumes, and traffic speeds should be considered.
 - Adjacent property owners and other stake holders need to be consulted. Commercial/ Residential activity creates specific considerations for this corridor. Driveway and on-street parking impacts need to be considered.
 - This project should involve DPW
 - Impacts on pedestrians, especially those on senior citizens or the mobility impaired, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
- Pacific Avenue, from Polk to Mason Streets
 - Liability to construct a Skykelheis Bicycle Lift
 - Pacific between Polk and Mason is a Muni route.
 - Narrow ROW.

Improvement Options:

- Lake Street, from Third Avenue to Arguello Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Intersection improvements at Lake Street and Arguello Boulevard
 - Stripe Sharrows on Lake Street (between 3rd Avenue and Arguello Boulevard)
- Pacific Avenue, from Polk to Mason Streets
 - Skykelheis Bicycle Lift, similar to Trondheim , Norway - - \$1,000,000

ROUTE 11: FISHERMAN'S WHARF TO SBC PARK AND THE CALTRAIN DEPOT

Network Improvement Project Location(s):

- Second Street, from Market Street to King Street
- Columbus Avenue, from Washington Street to Beach Street

Current Route Description:

Columbus Avenue/Sansome Street/Battery Street/Second Street

This route connects Aquatic Park and Fisherman's Wharf with North Beach, the Financial District, and the South of Market Area including the SBC Park and the Caltrain Depot. The route follows Columbus Avenue from Northpoint Street to the Washington Street/Clay Street one-way couplet, which connects to the Sansome Street/Battery Street one-way couplet to provide access to the Financial District. It continues south of Market Street via Second Street to Route 5(King Street/The Embarcadero) and also connects with Route 36 (Townsend Street).

Generalized Opportunities:

- Second Street, from Market Street to King Street
 - Please refer to the Second Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Columbus Avenue, from Washington Street to Beach Street
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This project is located in a commercial district. Any parking changes should consider impacts to adjacent property owners.

Generalized Constraints:

- Second Street, from Market Street to King Street
 - Please refer to the Second Street Summary Sheets in Appendix 9a.
- Columbus Avenue, from Washington Street to Beach Street
 - Dense commercial zone with a high demand for parking and high parking turnover.
 - Several Muni routes, including a cable car line.

- Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
- This project is located along a transit route and transit vehicle operations will need to be considered. Please consult the San Francisco Bicycle Plan: Policy Framework Document's Bicycle and Transit Policy in Chapter 2 for guidance.
- This project is located in a commercial district. Any parking changes should consider impacts to adjacent property owners.

Improvement Options:

- Second Street, from Market Street to King Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Second Street was identified as a "Priority Project" during this planning process. Therefore, there was additional development of conceptual options that received public input and feedback. Taking this into consideration, the San Francisco County Transportation Authority (SFCTA) is pursuing hiring a consultant and an additional staff member to continue work on this project. The SFCTA has not made a determination as to which Second Street option should be pursued. Please refer to the Second Street Summary Sheets in Appendix 9a.
 - Depending on the outcome of SFCTA's review, an EIR may be necessary for this project
- Columbus Avenue, from Washington Street to Beach Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Install "Sharrows", BIKES ALLOWED USE OF FULL LANE (BAUFL) signage, and explore better pavement markings for the cable car tracks.

ROUTE 16: MARKET STREET TO PRESIDIO AVENUE

Network Improvement Project Location(s):

- Post Street, from Steiner Street to Market Street
- Sutter Street, from Market Street to Steiner Street

Current Route Description:

(Route 16) travels the Sutter Street (westbound)/Post Street(eastbound) couplet between Market (Route 50) and Steiner Street and bi-directionally on the Post Street Bike Lanes from Steiner to Presidio Avenue (Route 55). High traffic volumes on parallel streets designated as major thoroughfares, such as Geary, Pine, and Bush Streets, make Post/Sutter the preferred bicycle route. (Route 16) also provides connections with several north-south routes:(Route 17) Stockton Street, (Route 25) Polk Street, (Route 345) Webster Street, and (Route 45) Steiner Street.

Generalized Opportunities:

- Post Street, from Steiner Street to Market Street
 - The combined resources resulting from the DPT/Muni merger give MTA a unique opportunity to create a showcase example of the City's Transit First Policy by integrating transit, pedestrians, and bicycles access along this important transportation corridor.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Sutter Street, from Market Street to Steiner Street
 - Matching potential installation of shared bus/bike lanes with DPW's repaving schedule could offer significant cost savings. Some of the starting dates, per DPW's tentative schedule, for re-pavement on the Bicycle Route Network include:
 - Post Street (Market to Powell): 01/01/05.
 - Sutter Street (Market to Powell): 01/01/05
 - The combined resources resulting from the DPT/Muni merger give MTA a unique opportunity to create a showcase example of the City's Transit First Policy by integrating transit, pedestrians, and bicycles access along this important transportation corridor.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Post Street, from Market Street to Steiner Street
 - Before the bus-only lanes can be converted to shared lanes, DPT will work with Muni as described within the Bicycle Plan: Policy Framework
 - The Japantown Neighborhood has repeatedly stated in very strong terms that they oppose bicycle lanes along Post Street.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and

integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- Sutter Street, from Market Street to Steiner Street
 - Before the bus-only lanes can be converted to shared lanes, DPT will work with Muni as described within the Bicycle Plan: Policy Framework
 - The Japantown Neighborhood has repeatedly stated in very strong terms that they oppose bicycle lanes along Post Street.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Post Street, from Steiner Street to Market Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Shared Bus/Bike Lanes along Post and Sutter
 - “Sharrows” combined with lane reductions, from three narrow travel lanes, to two travel lanes.
- Sutter Street, from Market Street to Steiner Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Shared Bus/Bike Lanes along Post and Sutter
 - “Sharrows” combined with lane reductions, from three narrow travel lanes, to two travel lanes.

ROUTE 17: NORTH BEACH TO UNION SQUARE (VIA STOCKTON STREET)

Network Improvement Project Location(s):

- Stockton Street, from Broadway to Market Street

Current Route Description:

Route 17 serves North Beach, Chinatown, the Union Square shopping district, and the Financial District. The Stockton Tunnel provides relatively flat access through Nob Hill, not available on parallel streets. Cyclists cannot access northbound Route 17 from eastbound Route 16 (Post Street), since Stockton Street is one-way southbound between Sutter and Market Streets. Northbound Route 17 follows Post Street, Grant Avenue, Sutter Street, to Stockton Street.

Generalized Opportunities:

- Stockton Street, from Broadway to Market Street
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Stockton Street, from Broadway to Market Street
 - Confined right-of-way within the Stockton Tunnel
 - Frequent Muni bus service along Stockton Street
 - Dense commercial zone with a high demand for parking and high parking turnover.
 - Deliveries, double parking, and pedestrians walking in the narrow street in Chinatown.
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Stockton Street, from Broadway to Market Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT Recommends Conceptual Planning and Design to:
 - Further improve Cycling Conditions within the Stockton Tunnel; As recommended in the 1997 Bicycle Plan. , DPT re-striped the Stockton Tunnel to create the existing northbound (uphill) bike lane. In the uphill direction, cyclists generally travel slower than motor vehicles and therefore greatly benefit from this bike lane. In the southbound (downhill) direction, most cyclists should be able to travel at speeds comparable to motor vehicles and the need for a bike lane is less crucial. However, removing one of the two southbound travel lanes in the tunnel so that a southbound bike lane can be striped should be studied.

- Explore a Contra-flow Bike Lane on Stockton Street between Sutter Street and Post Street;
- Explore Striping Bike Lanes on Stockton Street, from Broadway to Market Street; or
- Explore installing “Sharrows” on Stockton Street, from Broadway to Market Street

ROUTE 19: MARKET STREET TO CALTRAIN DEPOT

Network Improvement Project Location(s):

- Fifth Street, from Market Street to Townsend Street

Current Route Description:

Cyclists on Route 19 can connect to Market Street (Route 50) and Townsend Street (Route 36). This is an important connection within the SOMA neighborhood, and is one of the primary connectors of the Mission Bay Development to Downtown. Route 19 continues along 4th Street and connects to Third Street.

Generalized Opportunities:

- Fifth Street, from Market Street to Townsend Street
 - Please refer to the Fifth Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Fifth Street, from Market Street to Townsend Street
 - Please refer to the Fifth Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - The General Plan's Transportation Element classifies 4th Street between Townsend Street and 3rd Street as an important truck route, a Transit Important Street in the Transit Priority Streets Network, and a Major Arterial. Provisions will be made to accommodate bicycles without interfering with the operation of the other primary transportation modes on this segment of 4th Street.
 - The proposed Central Subway will run on 4th Street. The new alignment will put the rail on and under 4th in both directions instead of just one direction. This will have an impact on the capacity of 5th Street. Muni's

environmental documentation for this should reflect this. Muni should be should be consulted regarding potential 5th Street Impacts.

Improvement Options:

- Fifth Street, from Market Street to Townsend Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Fifth Street was identified as a “Priority Project” during this planning process. Therefore, there was additional development of conceptual options that received public input and feedback. Taking this into consideration, the SFCTA is pursuing hiring a consultant and an additional staff member to continue work on this project. The SFCTA has not made a determination as to which Fifth Street option should be pursued. Please refer to the Fifth Street Summary Sheets in Appendix 9a.
 - Depending on the outcome of SFCTA’s review, an EIR may be necessary of this project
- Fourth Street, from Townsend Street to Third Street; and Mission Rock, from Third Street to Terry A Francois Boulevard.
 - DPT Recommends Conceptual Planning and Design to extend Route 19 to Illinois Street.

ROUTE 20: MARKET STREET TO OCEAN BEACH

Network Improvement Project Location(s):

- Golden Gate Avenue, from Parker Avenue to Baker Street
- Parker Avenue, from Turk Street to Golden Gate Avenue
- Mc Allister Street, from Market Street to Baker Street
- Mc Allister Street, from Baker Street to Polk Street
- Grove Street, from Van Ness Avenue to Octavia Boulevard

Current Route Description:

McAllister Street /Turk Street/Fulton Street/Cabrillo Street

This cross-town route provides access for cyclists traveling on Route 50 (Market Street) and Route 23 (7th and 8th Streets) to the Western Addition and the Richmond District, ending at the Great Highway (Route 95). It intersects many north-south routes, offering connections to many parts of the City, including the Civic Center, the University of San Francisco, and Golden Gate Park.

(Westbound route): Starts at Market Street, travels along McAllister Street through the Western Addition to Baker Street. At this point, westbound and eastbound Route 20

travel along the same streets: Baker Street, Golden Gate Avenue, Parker Avenue, Turk Street, Arguello Boulevard, and Cabrillo Street.

(Eastbound route): Starts along Cabrillo Street and travels along the route above in reverse, but diverges along Baker Street where it turns east on Fulton Street to Octavia Street, then to Grove Street, and finally to Market Street where it ends.

This route was modified from the route described in the 1997 Bicycle Plan for a number of reasons. First, when Golden Gate Avenue was repaved, it provided an opportunity to remove a motor vehicle lane on a portion of the street and add bicycle lanes. Also, bike lanes were added on Baker Street between McAllister Street and Golden Gate Avenue. While the original Route 20 required cyclists to make a somewhat difficult left turn from Masonic Avenue onto McAllister Street, the new route does not, making it easier to navigate. Finally, this reroute takes cyclists off a portion of McAllister Street which is a Secondary Transit Street.

Further modification of this route could take place at its east end. If the outbound Market Street to eastbound Grove Street connection can be improved, it would be possible to reroute eastbound Route 20 from McAllister to Grove Street, thereby allowing both eastbound and westbound cyclists to travel along Grove Street from Market Street to Octavia Street.

Generalized Opportunities:

- Golden Gate Avenue, from Parker Avenue to Baker Street
- Parker Avenue, from Turk Street to Golden Gate Avenue
- McAllister Street, from Market Street to Baker Street

- Grove Street, from Van Ness Avenue to Octavia Boulevard
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Golden Gate Avenue, from Parker Avenue to Baker Street
- Parker Avenue, from Turk Street to Golden Gate Avenue
- McAllister Street, from Market Street to Baker Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - It is acknowledged that the General Plan's Transportation Element classifies McAllister Street between Central Avenue and Market Street as a Secondary Transit Street in the Transit Priority Streets Network.

Provisions will be made to accommodate bicycles without interfering with the operation of transit on this segment of McAllister Street.

- Mc Allister Street, from Baker Street to Polk Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - It is acknowledged that the General Plan's Transportation Element classifies McAllister Street between Central Avenue and Market Street as a Secondary Transit Street in the Transit Priority Streets Network. Provisions will be made to accommodate bicycles without interfering with the operation of transit on this segment of McAllister Street.
- Grove Street, from Van Ness Avenue to Octavia Boulevard
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Golden Gate Avenue, from Parker Avenue to Baker Street
 - This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
- Grove Street, from Van Ness Avenue to Octavia Boulevard
 - This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
- McAllister Street, from Market Street to Baker Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Parker Avenue, from Turk Street to Golden Gate Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.

ROUTE 23: MISSION BAY (MARIPOSA STREET) TO CIVIC CENTER

Network Improvement Project Location(s):

- Mariposa Street, from Pennsylvania Avenue to Indiana Street

Current Route Description:

7th Street & 8th Street Couplet/Mississippi Street/Mariposa Street

North of Townsend Street, the 7th Street/8th Street one-way couplet connects South of Market, China Basin and Potrero Hill. South of Townsend Street, Route 23 continues via the two-way portion of 7th Street, Mississippi Street, and Mariposa Street, where it ends at Route 7 (Indiana Street).

Generalized Opportunities:

- Mariposa Street, from Pennsylvania Avenue to Indiana Street
 - DPT has obtained grant funds to stripe and sign bike lanes on Mississippi Street from 16th to Mariposa Streets.

Generalized Constraints:

- Mariposa Street, from Pennsylvania Avenue to Indiana Street
 - It is acknowledged that the General Plan's Transportation Element classifies 8th Street between Market Street and Townsend Street as an important truck route and a Major Arterial. However, Action 8.3 of this Bicycle Plan's Policy Framework calls for amending the Transportation Element so that Area Plans are consistent with goals of the Bicycle Policy Framework. Intra- and interdepartmental discussions should be undertaken with the goal of safely accommodating bicycles without interfering with the operation of the other primary transportation modes on this segment of 8th Street.

Improvement Options:

- Mariposa Street, from Pennsylvania Avenue to Indiana Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT has obtained grant funds to stripe and sign bike lanes on Mississippi Street from 16th to Mariposa Streets

**ROUTE 25: AQUATIC PARK (POLK STREET) TO VISITATION VALLEY
(BAYSHORE BOULEVARD)**

Network Improvement Project Location(s):

- Polk Street, from Mc Allister Street to Grove Street
- Polk Street, from Grove Street to Lech Walesa Street
- Polk Street, Lech Walesa Street to Hayes Street
- Polk Street, from Hayes Street to Market Street
- Eleventh Street, from Market Street to Mission Street
- Potrero Avenue, from Division Street to 17th Street
- Potrero Avenue, from 17th Street to Cesar Chavez Street
- Bayshore Boulevard Cesar Chavez Street to US 101 Off ramp
- Bayshore Boulevard US 101 Off ramp to Industrial Street
- Jerrold Avenue, from Bayshore Boulevard to Barneveld Avenue (southbound)
- Barneveld Avenue Jerrold Avenue to Loomis Street (southbound)
- Loomis Street Barneveld Avenue to Industrial Street (southbound)
- Industrial Street Loomis Street to Bayshore Boulevard (southbound)

- Bayshore Boulevard Industrial Street to Silver Avenue
- Bayshore Boulevard Silver Avenue to Fitzgerald Avenue
- Bayshore Boulevard Fitzgerald Avenue to Paul Avenue
- Bayshore Boulevard Paul Avenue to Mansell Street
- Bayshore Boulevard Mansell Street to Hester Avenue

Current Route Description:

Polk Street/10th Street/Howard Street/11th Street/Harrison Street/17th Street/Potrero Avenue/Bayshore Boulevard/San Bruno Avenue

Route 25 connects Aquatic Park, Civic Center, the Mission District, Bernal Heights, Bay View and Visitacion Valley. It begins at Route 2 (Northpoint Street) and proceeds south on Polk Street to Route 50 (Market Street). Larkin Street is designated the northbound route between Grove and Market Streets, since Polk Street is one-way southbound, between Grove and Market Street. Northbound cyclists are routed along 11th Street, while southbound are routed to 10th Street to Howard Street back to 11th Street. The route continues from 11th Street to Harrison Street. From Harrison Street the route continues to Potrero Avenue via 17th Street (also Route 40). From Potrero Avenue the route continues to 17th Street and its intersection with Cesar Chavez Street and Bayshore Boulevard at US 101.

The connection between Potrero Avenue and Bayshore Boulevard is important for the continuity of this route, which serves the City's eastern industrial districts as well as Bayview, Hunters Point and Candle Stick Stadium. The Potrero Avenue/Cesar Chavez Street/Bayshore Boulevard/US 101 interchange is a major challenge for cyclists. To continue on Route 25 in either direction through this interchange, cyclists must weave across several lanes of fast moving traffic onto raised ramps, overcrossings and off-ramps. Another alternative is Route 525 (Twenty Third Street/Kansas Street).

From Potrero Avenue, Route 25 continues via Bayshore Boulevard to Route 5 (Third Street), which continues south to San Mateo County. Until bicycle related improvements are made at the Bayshore Boulevard/ Third Street/US 101 intersection, the following interim route is recommended: Bayshore Boulevard, Paul Avenue, and San Bruno Avenue to Route 5 (Bayshore Boulevard).

Generalized Opportunities:

- Polk Street, from Mc Allister Street to Grove Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.

- Polk Street, from Grove Street to Lech Walesa Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Polk Street, Lech Walesa Street to Hayes Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Polk Street, from Hayes Street to Market Street
- Polk Street, from Market Street to Mc Allister Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Eleventh Street, from Market Street to Mission Street
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Potrero Avenue, from Division Street to 17th Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov
- Potrero Avenue, from 17th Street to Cesar Chavez Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov
- Bayshore Boulevard Cesar Chavez Street to US 101 Off ramp

- This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Bayshore Boulevard US 101 Off ramp to Industrial Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Jerrold Avenue, from Bayshore Boulevard to Barneveld Avenue (southbound).
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Barneveld Avenue Jerrold Avenue to Loomis Street (southbound)
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Loomis Street Barneveld Avenue to Industrial Street (southbound)
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Industrial Street Loomis Street to Bayshore Boulevard (southbound)
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Bayshore Boulevard Industrial Street to Silver Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Bayshore Boulevard Silver Avenue to Fitzgerald Avenue
- Bayshore Boulevard San Bruno Avenue to Cesar Chavez
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and

integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Bayshore Boulevard Fitzgerald Avenue to Paul Avenue
- Bayshore Boulevard San Bruno Avenue to Cesar Chavez
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Bayshore Boulevard Paul Avenue to Mansell Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Bayshore Boulevard Mansell Street to Hester Avenue
 - Please refer to the Bayshore Boulevard Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Potrero Avenue, from Division Street to 17th Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov

Generalized Constraints:

- Polk Street, from Mc Allister Street to Grove Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

- Polk Street, from Grove Street to Lech Walesa Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Polk Street, Lech Walesa Street to Hayes Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Polk Street, from Hayes Street to Market Street
 - Please refer to the Polk Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Eleventh Street, from Market Street to Mission Street
 - This bicycle facility is located on a Muni Route.
- Potrero Avenue, from Division Street to 17th Street
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - Any parking changes should consider impacts to adjacent property owners.
 - Adjacent property owners and other stake holders need to be consulted. Commercial and Residential activity creates specific considerations for this corridor. Driveway and on-street parking impacts need to be considered
- Potrero Avenue, from 17th Street to Cesar Chavez Street
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Bayshore Boulevard Cesar Chavez Street to US 101 Off ramp

- This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Bayshore Boulevard US 101 Off ramp to Industrial Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Jerrold Avenue, from Bayshore Boulevard to Barneveld Avenue (southbound)
- Barneveld Avenue Jerrold Avenue to Loomis Street (southbound)
- Loomis Street Barneveld Avenue to Industrial Street (southbound)
- Industrial Street Loomis Street to Bayshore Boulevard (southbound)
 - Please refer to the Bayshore Boulevard Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Bayshore Boulevard Industrial Street to Silver Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Bayshore Boulevard Silver Avenue to Fitzgerald Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Bayshore Boulevard Fitzgerald Avenue to Paul Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Bayshore Boulevard Paul Avenue to Mansell Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Bayshore Boulevard Mansell Street to Hester Avenue
 - Please refer to the Bayshore Boulevard Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Polk Street, from Mc Allister Street to Grove Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Polk Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends the exploration of installing contra-flow bike lanes, however some outreach still needs to occur and PS&Es still need to be developed.
- Polk Street, from Grove Street to Lech Walesa Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Polk Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends the exploration of installing contra-flow bike lanes, however some outreach still needs to occur and PS&Es still need to be developed.
- Polk Street, Lech Walesa Street to Hayes Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Polk Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends the exploration of installing contra-flow bike lanes, however some outreach still needs to occur and PS&Es still need to be developed.
- Polk Street, from Hayes Street to Market Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Polk Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends the exploration of installing contra-flow bike lanes, however some outreach still needs to occur and PS&Es still need to be developed.
- Eleventh Street, from Market Street to Mission Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Potrero Avenue, from Division Street to 17th Street
 - Conceptual Planning needs to occur. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Potrero Avenue, from 17th Street to Cesar Chavez Street

- Improvements are being implemented at the writing of this document.
- Bayshore Boulevard Cesar Chavez Street to US 101 Off ramp
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Bayshore Boulevard was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: Option 1 be explored for section A, option 1 for section B, option 1 for section C, and option 1 for section D. For section E, staff recommends that the narrowing of the median be explored to accommodate the northbound direction, while the southbound direction will utilize Loomis Street. Section F requires Preliminary Design and Engineering to be developed and should be coordinated with improvements to the Cesar Chavez Street/Potrero Street/ 101 interchange improvements. These options were selected with the understanding that parking removal would better accommodate a bicycle facility and Muni BRT plans. Please refer the Bayshore Boulevard Summary Sheets in Appendix 9a.
- Bayshore Boulevard US 101 Off ramp to Industrial Street
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Bayshore Boulevard was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: Option 1 be explored for section A, option 1 for section B, option 1 for section C, and option 1 for section D. For section E, staff recommends that the narrowing of the median be explored to accommodate the northbound direction, while the southbound direction will utilize Loomis Street. Section F requires Preliminary Design and Engineering to be developed and should be coordinated with improvements to the Cesar Chavez Street/Potrero Street/ 101 interchange improvements. These options were selected with the understanding that parking removal would better accommodate a bicycle facility and Muni BRT plans. Please refer the Bayshore Boulevard Summary Sheets in Appendix 9a.
- Jerrold Avenue, from Bayshore Boulevard to Barneveld Avenue (southbound)
 - These segments were identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
 - Include Loomis Street, from Oakdale to Industrial Street, on the Bicycle Network.
 - Install “Sharrows” and BIKES ALLOWED USE OF FULL LANE (BAUFL) signage
 - Install Bike Lanes
- Barneveld Avenue Jerrold Avenue to Loomis Street (southbound)
 - These segments were identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.

- Include Loomis Street, from Oakdale to Industrial Street, on the Bicycle Network.
 - Install “Sharrows” and BIKES ALLOWED USE OF FULL LANE (BAUFL) signage
 - Install Bike Lanes
- Loomis Street Barneveld Avenue to Industrial Street (southbound)
 - These segments were identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
 - Include Loomis Street, from Oakdale to Industrial Street, on the Bicycle Network.
 - Install “Sharrows” and BIKES ALLOWED USE OF FULL LANE (BAUFL) signage
 - Install Bike Lanes
- Industrial Street Loomis Street to Bayshore Boulevard (southbound)
 - These segments were identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
 - Include Loomis Street, from Oakdale to Industrial Street, on the Bicycle Network.
 - Install “Sharrows” and BIKES ALLOWED USE OF FULL LANE (BAUFL) signage
 - Install Bike Lanes
- Bayshore Boulevard Industrial Street to Silver Avenue
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Bayshore Boulevard was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: Option 1 be explored for section A, option 1 for section B, option 1 for section C, and option 1 for section D. For section E, staff recommends that the narrowing of the median be explored to accommodate the northbound direction, while the southbound direction will utilize Loomis Street. Section F requires Preliminary Design and Engineering to be developed and should be coordinated with improvements to the Cesar Chavez Street/Potrero Street/ 101 interchange improvements. These options were selected with the understanding that parking removal would better accommodate a bicycle facility and Muni BRT plans. Please refer the Bayshore Boulevard Summary Sheets in Appendix 9a.
- Bayshore Boulevard Silver Avenue to Fitzgerald Avenue
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Bayshore Boulevard was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: Option 1 be explored for section A, option 1 for section B, option 1 for section C, and option 1 for section D. For section E, staff recommends that the narrowing of the median be

explored to accommodate the northbound direction, while the southbound direction will utilize Loomis Street. Section F requires Preliminary Design and Engineering to be developed and should be coordinated with improvements to the Cesar Chavez Street/Potrero Street/ 101 interchange improvements. These options were selected with the understanding that parking removal would better accommodate a bicycle facility and Muni BRT plans. Please refer the Bayshore Boulevard Summary Sheets in Appendix 9a.

- Bayshore Boulevard Fitzgerald Avenue to Paul Avenue
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Bayshore Boulevard was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: Option 1 be explored for section A, option 1 for section B, option 1 for section C, and option 1 for section D. For section E, staff recommends that the narrowing of the median be explored to accommodate the northbound direction, while the southbound direction will utilize Loomis Street. Section F requires Preliminary Design and Engineering to be developed and should be coordinated with improvements to the Cesar Chavez Street/Potrero Street/ 101 interchange improvements. These options were selected with the understanding that parking removal would better accommodate a bicycle facility and Muni BRT plans. Please refer the Bayshore Boulevard Summary Sheets in Appendix 9a.
- Bayshore Boulevard Paul Avenue to Mansell Street.
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Bayshore Boulevard was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: Option 1 be explored for section A, option 1 for section B, option 1 for section C, and option 1 for section D. For section E, staff recommends that the narrowing of the median be explored to accommodate the northbound direction, while the southbound direction will utilize Loomis Street. Section F requires Preliminary Design and Engineering to be developed and should be coordinated with improvements to the Cesar Chavez Street/Potrero Street/ 101 interchange improvements. These options were selected with the understanding that parking removal would better accommodate a bicycle facility and Muni BRT plans. Please refer the Bayshore Boulevard Summary Sheets in Appendix 9a.
- Bayshore Boulevard Mansell Street to Hester Avenue.
 - This segment was identified as a Study Area within the Bicycle Plan: Policy Framework.

**ROUTE 30: THE EMBARCADERO (SOUTH OF MARKET) TO OCEAN
BEACH (VIA GOLDEN GATE PARK)**

Network Improvement Project Location(s):

- Ashbury Street, from Page Street to Panhandle Path
- Baker Street, from Page Street to Panhandle Path
- Clayton Street, from Page Street to Panhandle Path
- Duboce Avenue, from Valencia Street to Market Street
- Fourteenth Street, from Market Street to Dolores Street
- Hayes Street, from Scott Street to Baker Street
- John F. Kennedy Drive, from Stanyan Street to Great Highway
- McCoppin Street, from Valencia Street to Market Street
- Panhandle Path, at the intersection of Fell Street and Masonic Avenue
- The "Wiggle", from Duboce Bikeway, to Steiner Street, to Waller Street, to
Pierce Street, to Haight Street, to Scott Street, to Fell Street.

Current Route Description:

**Howard Street/Folsom Street Couplet/14th Street/Duboce Avenue/
The "Wiggle"⁷/Panhandle Multi-Use Path/John F. Kennedy Drive**

Beginning in the east with the Howard Street/Folsom Street one-way couplet, this route provides relatively level access across San Francisco from the South of Market Area (SOMA), through Golden Gate Park, to Ocean Beach. The Howard Street/Folsom Street couplet provides a link between the Central Business District (CBD) and the Mission District connecting Route 25 (Eleventh Street/Harrison Street).

At 11th Street, the eastbound and westbound routes diverge until Sanchez Street. Both directions of route 30 then continue together via the "Wiggle", the Panhandle Multi-Use Path, and John F. Kennedy Drive in Golden Gate Park.

The westbound route from Howard Street is via 11th, Mission, Otis, McCoppin, and Market Streets and Duboce Avenue to Sanchez Street. Although Mission Street has heavy bus traffic and its right lane is narrow, it is only used for two blocks.

The eastbound route to Folsom Street is via Sanchez and 14th Streets. The Duboce Bikeway and the "Wiggle" provide an extremely important connection, particularly in the westbound direction, between Market Street and the Panhandle.

From the Duboce Bikeway and Sanchez Street route 30 continues via Steiner, Waller, Pierce and Scott Streets. It is coincident with and connects with Route 47 (Scott, Waller,

⁷ The "Wiggle" is the name local bicyclists have given to the routes which connect Upper Market to the Panhandle and avoid the major hills.

and Sanchez Streets). Due to the significant grades (greater than 15 percent) on Page and Haight Streets, the route continues on Fell Street for three blocks between Scott and Baker Streets.

Route 30 continues on the Panhandle Multi-Use Path to Golden Gate Park. The intersection of this path and Masonic Avenue should be improved and has been studied as part of the 2004 Bicycle Plan Update planning process.

At the intersection of Fell and Shrader Streets, a bicycle and pedestrian signal phase has been installed, dubbed the “Shrader Valve”², because it eases path user congestion at the end of the Panhandle Path at Stanyan Street by diverting westbound cyclists to a bike lane on Fell Street. In Golden Gate Park, the route follows John F. Kennedy Drive to the Great Highway (Route 95).

Generalized Opportunities:

- Ashbury Street, from Page Street to Panhandle Path
 - Golden Gate Park Master Plan
- Baker Street, from Page Street to Panhandle Path
 - Golden Gate Park Master Plan
- Clayton Street, from Page Street to Panhandle Path
 - Golden Gate Park Master Plan
- Duboce Avenue, from Valencia Street to Market Street
- Fourteenth Street, from Market Street to Dolores Street
 - Please refer to the 14th Street Summary Sheets in Appendix 9a.
- Hayes Street, from Scott Street to Baker Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- JFK Drive, from Stanyan Street to Great Highway
 - This bicycle facility has been identified within the MTC Regional Bikeway System. Refer to the following MTC web link for more information:
www.mtc.ca.gov.
- Mc Coppin Street, from Valencia Street to Market Street
- Panhandle Path, at the intersection of Fell Street and Masonic Avenue
 - Please refer to the Fell and Masonic Intersection Summary Sheets in Appendix 9a.
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.

² A Shrader Valve is a valve typically found on a mountain bike tube. The path entrance to a bicycle lane that leads into Golden Gate Park occurs at Shrader Street.

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- This bicycle facility has been identified within the MTC Regional Bikeway System. Refer to the following MTC web link for more information:
www.mtc.ca.gov
- The “Wiggle”, from Duboce Bikeway, to Steiner Street, to Waller Street, to Pierce Street, to Haight Street, to Scott Street, to Fell Street.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility has been identified within the MTC Regional Bikeway System. Refer to the following MTC web link for more information:
www.mtc.ca.gov.

Generalized Constraints:

- Ashbury Street, from Page Street to Panhandle Path
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
- Baker Street, from Page Street to Panhandle Path
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
- Clayton Street, from Page Street to Panhandle Path
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
- Duboce Avenue, from Valencia Street to Market Street
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
- Fourteenth Street, from Market Street to Dolores Street
 - Please refer to the 14th Street Summary Sheets in Appendix 9a.
- Hayes Street, from Scott Street to Baker Street
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- JFK Drive, from Stanyan Street to Great Highway
 - This project should involve Department of Recreation and Park

- Mc Coppin Street, from Valencia Street to Market Street
- Panhandle Path, at the intersection of Fell Street and Masonic Avenue
 - Please refer to the Fell and Masonic Intersection Summary Sheets in Appendix 9a.
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- The “Wiggle”, from Duboce Bikeway, to Steiner Street, to Waller Street, to Pierce Street, to Haight Street, to Scott Street, to Fell Street.
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Clayton Street, from Page Street to Panhandle Path
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Ashbury Street, from Page Street to Panhandle Path
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve path and signage between the Panhandle Path and Page Street to allow for a better connection to Page Street.
- Baker Street, from Page Street to Panhandle Path
 - Improve path and signage between the Panhandle Path and Page Street to allow for a better connection to Page Street. Clayton Street, from Page Street to Panhandle Path
 - Improve path and signage between the Panhandle Path and Page Street to allow for a better connection to Page Street..
- Duboce Avenue, from Valencia Street to Market Street
 - Uphill Bike Lanes (westbound), and a bicycle box at the intersection of Duboce Avenue and Market Street to provide a better connection to the Duboce Bikeway.
- Fourteenth Street, from Market Street to Dolores Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.

- DPT recommends Option B be pursued for Preliminary Design and Engineering to stripe and sign a new bike lane by converting the street from two-way to one-way operation (eastbound) that includes concrete island removal and pavement restoration). DPT has obtained grant funds for the Preliminary Design and Engineering. Please refer to the Fourteenth Street Summary Sheets in Appendix 9a.
- Hayes Street, from Scott Street to Baker Street
 - This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
 - DPT recommends removing this portion of Hayes Street from the Bicycle Route Network. The 1997 Bicycle Plan specified that this portion of the route was temporary until bike lanes could be striped on Fell Street (that has been done).
- JFK Drive, from Stanyan Street to Great Highway
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - The Golden Gate Park Traffic Calming Concept Plan (approved by the Golden Gate Park Concourse Authority (GGPCA) and its EIR certified by the Planning Commission) includes striped bike lanes on JFK Drive.⁹ With GGPCA funds as a local match, DPT applied for funds for the first phase of these 1.5 mile bike lanes (striping and signing between Stanyan Street/Kezar Dr. and Transverse Drive, including ADA/safety improvements at seven crosswalks, and associated signage). Bike lanes west of Crossover Drive to The Great Highway are recommended, but no additional GGPCA funds are available until the GGPCA garage debt is paid off. DPT will pursue other funding options.
- Mc Coppin Street, from Valencia Street to Market Street
 - Mc Coppin Street from Valencia Street to Market Street has been closed to motor vehicle traffic since the construction of Octavia Boulevard. A multi-use path is proposed at this location. Safety, signing, and lighting issues should be adequately explored.
- Panhandle Path, at the intersection of Fell Street and Masonic Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT recommends Option A be pursued for Preliminary Design, Engineering, and Construction at this time. This option involves removing approximately three on-street parking spaces on Fell Street to increase visibility of the Panhandle path, instituting an advance walk traffic signal phase to allow bicyclists and pedestrians to get a “head start” on motor vehicles, striping a high-visibility “ladder” crosswalk, relocating the stop limit line for northbound Masonic Street, and installing additional

⁹ Bicycle improvements along JFK Drive have been part of planning for Golden Gate Park for quite some time. The 1998 Golden Gate Park Master Plan included a multi-use bicycle and pedestrian path along JFK Drive. This concept was changed to on-street bicycle lanes on the existing roadway in response to input from bicycle stakeholder groups during development of the 2002 Golden Gate Park Transportation Improvement Program (TIP).

“Yield to Bikes and Peds” signage. DPT has obtained grant funds for the Preliminary Design, Engineering, and Construction of Option A. Part of the work scope for these funds requires that DPT evaluate the effectiveness of Option A in improving cyclists’ safety before considering Options B or C, suggested in Fell and Masonic Intersection Street Summary Sheets. Please refer to the Fell and Masonic Intersection Street Summary Sheets in Appendix 9a.

- The “Wiggle”, from Duboce Bikeway, to Fell Street via Steiner, Waller , Pierce , Haight , and Scott Streets.
 - These segments were recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT recommends an improved signage and that a marking program be implemented to highlight this unique and important “center hub” of the Bicycle Route Network.

ROUTE 32: VAN NESS AND MARKET TO GOLDEN GATE PARK (VIA PAGE)

Network Improvement Project Location(s):

- Page Street, from Stanyan Street to Market Street
- Intersection of Page Street and Stanyan Street, path crossing.

Current Route Description:

Page Street/Golden Gate Park

Page Street provides an excellent route to and from Market Street to Golden Gate Park. For eastbound bicyclists, Page Street is a wonderful downhill to Market Street. Once in Golden Gate Park, Route 32 connects with Route 365 (Kesar Drive Path) and with Route 30 (JFK Drive) via multi-use paths.

Generalized Opportunities:

- Page Street, from Stanyan Street to Market Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Intersection of Page Street and Stanyan Street, path crossing.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Page Street, from Stanyan Street to Market Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and

integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- Intersection of Page Street and Stanyan Street, path crossing.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Page Street, from Stanyan Street to Market Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Install “Sharrows” for the entire length of Page Street.
 - Intersection of Page Street and Stanyan Street, path crossing.
 - Signalize the intersection of Page and Stanyan Streets. (DPT analysis determined that this intersection meets signalization warrants, but funds need to identified.)
 - Redesign the east end of the existing path in Golden Gate Park allow more convenient straight bicycle through access (while maintaining bicycle safety and ADA compliance)
 - Install new signs with both pedestrian and bicycle warning symbols and a “PED XING” logo in advance of the crosswalk.
- Intersection of Page Street and Stanyan Street, path crossing
 - Traffic signal and signs \$175,000 - \$200,000

ROUTE 33: HARRISON STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

Harrison Street

This route provides cyclists traveling on Route 25 (11th Street/Harrison Street) the opportunity to remain on Harrison Street south of 17th Street to Cesar Chavez Street.

Generalized Opportunities:

Generalized Constraints:

- Stripe bike lanes between 22nd and 26th Streets.
 - A travel lane would need to be eliminated between 22nd and 26th Streets.
 - Extensive angle parking exists on these blocks and parking is in high demand in this dense residential neighborhood.

Improvement Options:

- From the 1997 Plan, Explore striping bike lanes between 22nd and 26th Streets.

ROUTE 34: MIDDLE DRIVE/MARTIN LUTHER KING JR. DRIVE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

Middle Drive/Martin Luther King Jr. Drive

Stemming off Route 75 (Transverse Drive), Route 34 provides access from the Western half of Golden Gate Park. The route begins on West Drive and connects with the multi-use path on Middle Drive to Martin Luther King Jr. Drive. Cyclists may proceed on Martin Luther King Jr. Drive or divert to Route 30 (JFK Drive to Fulton Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 36: TOWNSEND STREET/DIVISION STREET

Network Improvement Project Location(s):

- Townsend Street, from The Embarcadero to 2nd Street
- Townsend Street, from 2nd Street to 4th Street
- Townsend Street, from 4th Street to Division Street
- Division Street, from Townsend Street to 11th Street

Current Route Description:

Townsend Street is an important route since it serves the Caltrain Depot. Starting at The Embarcadero, the route follows Townsend, Division, and 13th Streets, where it connects with Route 25 (Harrison Street). It continues south two blocks on Harrison Street and west one block on 14th Street to eastbound Route 30 (14th and Folsom Streets).

Generalized Opportunities:

- Townsend Street, from The Embarcadero to 2nd Street
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Townsend Street, from 2nd Street to 4th Street
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.

- The SFCTA has offered to hire a consultant to assist the DPT Bicycle Program. Townsend Street is a recommended project for the SFCTA's consultant to work on. Please refer to the Townsend Street Summary Sheets in Appendix 9a.
- Townsend Street, from 4th Street to Division Street
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
 - DPT applied for Regional Bicycle and Pedestrian Program funds to stripe bike lanes
- Division Street, from Townsend Street to 11th Street
 - The ongoing interest in a conceptual Mission Creek Bikeway could lead to on-road improvements.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.

Generalized Constraints:

- Townsend Street, from The Embarcadero to 2nd Street
 - Please refer to the Townsend Street Summary Sheets in Appendix 9a.
- Townsend Street, from 2nd Street to 4th Street
 - Please refer to the Townsend Street Summary Sheets in Appendix 9a.
- Townsend Street, from 4th Street to Division Street
 - Please refer to the Townsend Street Summary Sheets in Appendix 9a.
- Division Street, from Townsend Street to 11th Street
 - This project is located in a commercial district. Any parking changes should consider impacts to adjacent property owners.
 - This project is located along a truck route. Lane widths, truck traffic volumes, and traffic speeds will need to be considered.
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Adjacent property owners and other stake holders need to be consulted. Industrial/ Commercial/ activity creates specific considerations for this corridor. loading docks, driveways, on-street parking impacts need to be considered.
 - This project will involve Caltrans. Project limits fall within Caltrans jurisdiction

Improvement Options:

- Townsend Street, from The Embarcadero to 2nd Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve signage and install “Sharrows”.
- Townsend Street, from 2nd Street to 4th Street
 - Townsend Street was identified as a “Priority Project” during this planning process. Therefore, there was additional development of conceptual options that received public input and feedback. Taking this into consideration, the SFCTA is pursuing hiring a consultant and an additional staff member to continue work on this project segment. The SFCTA has not made a determination as to which Townsend Street option should be pursued. Since the section of Townsend Street from 2nd to 4th Streets requires the elimination of one travel lane to provide room for bike lanes and Muni has expressed strong concerns, bike lanes on Townsend Street from 2nd to 4th Streets have been separated into a second phase of this project. This has allowed the first phase (bike lanes from 4th to Division Streets) to proceed at this time (pending receipt of funding). Please refer to the Second Street Summary Sheets in Appendix 9a.
- Townsend Street, from 4th Street to Division Street
 - With support of the BAC and SFBC, DPT applied for funds to design, stripe, and sign bike lanes on Townsend Street from 4th to Division Streets.
- Division Street, from Townsend Street to 11th Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore Striping Bike Lanes.
 - Improve signage and install “Sharrows”.

ROUTE 40: OCEAN BEACH TO ILLINOIS STREET (VIA KIRKHAM AND 17TH/16TH STS.)

Network Improvement Project Location(s):

- Seventeenth Street, from Market Street to Kansas Street
- Sixteenth Street, from Kansas Street to Bryant Street
- Kirkham Street, from 6th Avenue to Great Highway
- Kirkham Path, from Lower Great Highway to Great Highway
- Corbett Avenue, from Clayton Street to 17th Street
- Seventeenth Street, from Corbett Avenue to Market Street

Current Route Description:

16th Street/17th Street/Corbett Avenue/Clayton Street/Parnassus Avenue/Kirkham Street

In the eastern portion of Route 40, 17th Streets provides an important connection through the Mission District and to the 16th Street BART Station. Route 40 also utilizes the Sixteenth Street bike lanes to bridge Illinois Street (Route 5) to both Kansas Street (Route 123) and to Mississippi Street (Route 23), which within a few blocks connects with (Route 7), thereby connecting Division, 11th, 5th, and Townsend Streets in the north to the 22nd Street Caltrain Station..

Traveling west, Route 40 continues via Kansas Street, 17th Street, and Corbett Avenue and the Route 50 junction allowing cyclists to turn south toward West Portal and Stern Grove. From Corbett Avenue, Route 40 then continues via Clayton Street, Parnassus Avenue, 6th Avenue, and then down Kirkham Street to Ocean Beach. Kirkham Street provides east-west access to the northern sunset as well as connections to Golden Gate Park and to San Francisco State University via Route 65 (7th Avenue), Route 75 (20th Avenue), Route 85 (34th Avenue), and Route 95 (the Great Highway).

Generalized Opportunities:

- Seventeenth Street, from Market Street to Kansas Street
 - Please refer to the 16th/ 17th Streets Corridor Summary Sheets in Appendix
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Sixteenth Street, from Kansas Street to Bryant Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - The scope of work for the SFCTA Strategic Analysis Report (SAR) for 16th Street Corridor Transportation Issues was approved by SFCTA Board in March 2002. Work on the SAR was on hold, but has resumed and SFCTA staff expect to release it in March 2005. The scope of work includes an analysis of potential transportation improvements that will develop a general paradigm for transportation investment along the corridor, develop preliminary estimates of cost for potential improvements, and analyze funding prospects. The SAR may recommend follow up analyses, and other specific actions. The DPT Bicycle Program has referred SFCTA staff to the work of the Bicycle Plan Update on the 16th Street/17th Street Corridor. Please refer to the 16th/ 17th Streets Corridor Summary Sheets in Appendix 9a.
- Kirkham Street, from 6th Avenue to Great Highway
 - This project is located in both residential and commercial districts. Any parking changes should consider impacts to adjacent property owners.

- Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Adjacent property owners and other stake holders need to be consulted. Commercial/ Residential activity creates specific considerations for this corridor. Driveways, and on-street parking impacts need to be considered.
- Kirkham Path, from Lower Great Highway to Great Highway
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
- Corbett Avenue, from Clayton Street to 17th Street
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Seventeenth Street, from Corbett Avenue to Market Street
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Seventeenth Street, from Market Street to Kansas Street
 - Please refer to the 16th/ 17th Streets Corridor Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Sixteenth Street, from Kansas Street to Bryant Street
 - Please refer to the 16th/ 17th Streets Corridor Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Kirkham Street, from 6th Avenue to Great Highway
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
- Kirkham Path, from Lower Great Highway to Great Highway
- Corbett Avenue, from Clayton Street to 17th Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- Seventeenth Street, from Corbett Avenue to Market Street
 - Limited right-of-way
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Seventeenth Street, from Market Street to Kansas Street
 - This segment was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Seventeenth Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: option 1 for Market Street to Harrison Streets, option 2 for Harrison Street to Potrero Avenue, option 1 for Potrero Avenue to Kansas Street.
 - Please refer to the 17th Street Intersection Summary Sheets in Appendix 9a.
- Sixteenth Street, from Kansas Street to Bryant Street
 - This segment was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Sixteenth Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. However, a lot of work still remains for 16th Street. Option 1 is recommended, which suggests additional study for 16th Street from Market Street to Bryant Street, and bike lanes from Bryant Street to Henry Adams Street. Staff recommends that a comprehensive planning project, similar to that undertaken by the SFCTA for Market Street, be undertaken for 16th Street to determine improvements for all modes, including bicycles.
- Kirkham Street, from 6th Avenue to The Great Highway
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore installing improved signage and “Sharrows”
 - Explore striping bike lanes
- Kirkham Path, from The Lower Great Highway to The Great Highway
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve path connection
- Corbett Avenue, from Clayton Street to 17th Street

- This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Explore improving signage and “Sharrows”
- Explore intersection improvements
- Seventeenth Street, from Corbett Avenue to Market Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore improving signage and “Sharrows”
 - Explore intersection improvements

ROUTE 44: GENERAL HOSPITAL TO UPPER MARKET

Network Improvement Project Location(s):

- Twenty-Second Street , from Chattanooga Street to Potrero Avenue
- Romain Overpass at Market Street

Current Route Description:

22nd Street/Chattanooga Street/Jersey Street/Diamond Street/Eureka Street/Romain Street

This route connects San Francisco General Hospital, the Mission District, Noe Valley and Upper Market. At San Francisco General Hospital at Potrero Avenue (Route 25), a connection can be made from Cesar Chavez Street (Route 60) from the east. From Potrero Avenue, Route 44 follows 22nd, Chattanooga, and Jersey Streets to Noe Valley. The route continues via Diamond, 23rd, Eureka, and 21st Streets, Grand View Avenue, and Romain Streets. The route crosses Market Street via an existing non-motor vehicle over-crossing at Romain Street. The route ends at Corbett Avenue, where cyclists can take Route 55 to the Haight and Richmond (connecting to Route 40 to the Sunset) or Route 50 to West Portal and Stern Grove.

Generalized Opportunities:

- Twenty-Second Street , from Chattanooga Street to Potrero Avenue
 - This is the flattest route to Noe Valley from the Mission Neighborhood
- Romain Overpass at Market Street
 - Provides an auto-free crossing of upper Market Street

Generalized Constraints:

- Twenty-Second Street , from Chattanooga Street to Potrero Avenue
- Romain Street Overpass at Market Street
 - American Disability Act may prevent minor adjustments to this overpass without a complete rebuild

- Cost to rebuild overpass bridge

Improvement Options:

- Twenty-Second Street , from Chattanooga Street to Potrero Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore improving signage and “Sharrows”
 - Explore intersection improvements
 - Explore striping bike lanes
- Romain Overpass at Market Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore options to rebuild and improve bridge overpass

ROUTE 45: MARINA TO DALY CITY (VIA VALENCIA STREET & ALEMANY BOULEVARD)

Network Improvement Project Location(s):

- Chenery Street, from 30th Street to Diamond Street
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Ottawa Avenue, from Alemany Boulevard to Cayuga Avenue
- Cayuga Avenue, from Ottawa Avenue to Still Street
- Alemany Boulevard, from Geneva Avenue to Bayshore Boulevard
- Lyell Street, from Alemany Boulevard to Bosworth Street
- San Jose Avenue, from Randall Street to 29th Street
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information, go to: www.mtc.ca.gov.
- Thirtieth Street, from Dolores Street to Sanchez Street
- Twenty-ninth Street, from Dolores Street to Sanchez Street
- Dolores Street, from 29th to San Jose Avenue
- McCoppin Bikeway, from Market Street to Valencia Street
- Octavia Boulevard, from McCoppin Bikeway to Hayes Green

Current Route Description:

Steiner Street/Webster Street/Octavia Street/Valencia Street/Chenery Street/Cayuga Avenue/Alemany Boulevard/San Jose Avenue

This route provides the least steep southbound ascent of Pacific Heights and crosses San Francisco to connect the Marina with the Daly City BART Station and San Mateo County

It begins as a signed route on Steiner Street at Greenwich Street (Route 6) and continues south through Pacific Heights and the Western Addition, merging with Route 20 (the Turk Street/Golden Gate Avenue one-way couplet). Steiner Street avoids the steep hills between Sutter and Clay Streets. The route continues south via Webster Street (see Route 345 description). To connect to Valencia Street, avoiding hills, the route continues via Fulton Street and Octavia Boulevard. A path, adjacent to the freeway, is being built as part of the Central Freeway/Octavia Boulevard Project that will connect the southern end of Octavia Boulevard to Valencia Street.

Valencia Street provides a connection to the heart of the Mission and Bernal Heights Districts, as it is the first flat street east of Twin Peaks and has bike lanes. South of Route 60 (Cesar Chavez Street), access to the southwest part of the City is via Tiffany Avenue and 29th, Dolores, 30th, Chenery and Diamond Streets. From Diamond Street cyclists can connect with westbound Route 70 (Circular Avenue/Monterey Boulevard) to Saint Francis Wood, Stern Grove, and San Francisco State University, eastbound Route 70 (Silver Avenue) to the Bay View District, or continue on Route 45 to the Daly City BART Station and San Mateo County via Cayuga Avenue, Ottawa Avenue, Alemany Boulevard, and San Jose Avenue.

Generalized Opportunities:

- Chenery Street, from 30th Street to Diamond Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Ottawa Avenue, from Alemany Boulevard to Cayuga Avenue
- Cayuga Avenue, from Ottawa Avenue to Still Street
- Alemany Boulevard, from Geneva Avenue to Bayshore Boulevard
 - Please refer to the Alemany Boulevard Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Lyell Street, from Alemany Boulevard to Bosworth Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- San Jose Avenue, from Randall Street to 29th Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Thirtieth Street, from Dolores Street to Sanchez Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Twenty-ninth Street, from Dolores Street to Sanchez Street

- Dolores Street, from 29th to San Jose Avenue
- McCoppin Bikeway, from Market Street to Valencia Street
 - Will be constructed with as part of the new Freeway touchdown
- Octavia Boulevard, from McCoppin Bikeway to Hayes Green
 - Will be constructed with as part of the new Freeway touchdown

Generalized Constraints:

- Chenery Street, from 30th Street to Diamond Street
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
- Ottawa Avenue, from Alemany Boulevard to Cayuga Avenue
- Cayuga Avenue, from Ottawa Avenue to Still Street
- Alemany Boulevard, from Geneva Avenue to Bayshore Boulevard
 - Please refer to the Alemany Boulevard Summary Sheets in Appendix 9a.
- Lyell Street, from Alemany Boulevard to Bosworth Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- San Jose Avenue, from Randall Street to 29th Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Thirtieth Street, from Dolores Street to Sanchez Street
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Twenty-ninth Street, from Dolores Street to Sanchez Street
 - This project is located in a residential district. Parking changes should consider impacts to adjacent property owners.
- Dolores Street, from 29th to San Jose Avenue
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
- McCoppin Bikeway, from Market Street to Valencia Street
 - DPT is concerned about long term maintenance and user safety of this facility
- Octavia Boulevard, from McCoppin Bikeway to Hayes Green
 - High turning volumes with a design that encourages cyclists to be on the frontage road, rather than on the boulevard.

Improvement Options:

- Chenery Street, from 30th Street to Diamond Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Reclassify Chenery Street as Route 66 to better access the Bernal Heights neighborhood. The Miguel Street bridge is one of the few crossings of the Bernal Cut (San Jose Avenue)
- Ottawa Avenue, from Alemany Boulevard to Cayuga Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Move Bicycle Route Network and route signs from Ottawa Avenue to Alemany Boulevard
- Cayuga Avenue, from Ottawa Avenue to Still Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Move Route Network and route signs from Cayuga Avenue to Alemany Boulevard
- Alemany Boulevard, from Geneva Avenue to Bayshore Boulevard
 - This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
- Lyell Street, from Alemany Boulevard to Bosworth Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- San Jose Avenue, from Randall Street to 29th Street
 - This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
- Thirtieth Street, from Dolores Street to Sanchez Street
- Twenty-ninth Street, from Dolores Street to Sanchez Street
 - This segment has been identified as a potential inclusion to the San Francisco Bicycle Route Network.
- McCoppin Bikeway, from Market Street to Valencia Street
 - Ensure regular maintenance. Explore allowing a left turn from Valencia Street on to Market Street for bicyclists.
- Octavia Boulevard, from McCoppin Bikeway to Hayes Green
 - Explore other alternatives for cyclists than the Octavia Boulevard frontage road.

ROUTE 47: SCOTT STREET/SANCHEZ STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

Scott Street/ "The Wiggle"/ Sanchez Street

Route 47 connects the Western Addition and Eureka Valley neighborhoods. It begins at Route 20 (the Turk Street/Golden Gate Avenue couplet) and continues via Scott, Waller, and Sanchez Streets. The portion of Route 47 south of Oak Street and north of Duboce Avenue is coincident with Route 30 (the "Wiggle"). Route 47 also provides connections to Route 32 (Page Street), Golden Gate Park, and Route 50 (Market Street) to Downtown and the Castro. It ends at Route 40 (17th Street), which provides a connection to the Mission District and Potrero Hill.

Generalized Opportunities:

- This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

ROUTE 49: THE CASTRO TO NOE VALLEY TO SAN JOSE AVENUE

Network Improvement Project Location(s):

- Thirtieth Street, from Chenery Street to Sanchez Street
- Sanchez Street, from 30th Street to 29th Street
- Twenty-ninth Street, from Sanchez Street to Dolores Street
- Church Street, from 29th Street to 30th Street

Current Route Description:

Eureka Street/Jersey Street/Sanchez Street

To connect the Castro, Noe Valley and Bernal Heights neighborhoods, this route uses Eureka, 23rd, Diamond, Jersey, Sanchez, and 30th Streets. In the northbound direction, cyclists are routed from Eureka Street to Corbett Avenue via Market and Douglass Streets because the northernmost block of Eureka Street is one-way southbound. Note that Route 49 is coincident with Route 44 (22nd Street/Chattanooga Street/Jersey Street/Diamond Street/ Eureka Street/Romain Street) between Sanchez Street /Jersey Street intersection and the Eureka Street/21st Street intersection).

Generalized Opportunities:

- Thirty Street, from Chenery Street to Sanchez Street

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Twenty-ninth Street, from Sanchez Street to Dolores Street
 - Rationalize the Bicycle Route Network around 29th Street, to coincide with potential improvements along San Jose Avenue. Currently, Route 45 turns off of San Jose Ave and on to 29th Street. This portion of 29th Street would remain part of the Bike Route Network, but would change designation to Route 49, extending to Sanchez Street.
- Church Street, from 29th Street to 30th Street
 - Include on the Bicycle Route Network.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Sanchez Street, from 30th Street to 29th Street

Generalized Constraints:

- Thirty Street, from Chenery Street to Sanchez Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Sanchez Street, from 30th Street to 29th Street
- Twenty-ninth Street, from Sanchez Street to Dolores Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Church Street, from 29th Street to 30th Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

- Twenty-ninth Street, from Sanchez Street to Dolores Street
 - Include on the Bicycle Route Network as Route 49
- Thirty Street, from Chenery Street to Sanchez Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.

- Remove the Route Network
- Sanchez Street, from 30th Street to 29th Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Remove the Route Network
- Church Street, from 29th Street to 30th Street
 - Include on the Bicycle Route Network.

ROUTE 50: FERRY BUILDING TO GREAT HIGHWAY

Network Improvement Project Location(s):

- Market Street, from Steuart Street to Octavia Boulevard
- Market Street, from Octavia Boulevard to 17th Street
- Portola Drive, from Corbett Avenue to Sloat Boulevard
- Sloat Boulevard, from 19th Avenue to La Playa Street

Current Route Description:

Market Street/17th Street/Corbett Avenue/Portola Drive/Sloat Boulevard

Route 50 begins at Justin Herrman Plaza and follows Market Street up to the intersection of 17th and Castro Streets. In the westbound direction 17th Street is utilized from Castro Street to Corbett Avenue. In the eastbound direction, the route uses Corbett Avenue, 17th Street, and Eureka Street to Market Street because 17th Street is one-way westbound east of Eureka Street.

From Corbett Avenue, the route continues on Portola Drive. Portola Drive provides access to Golden Gate Park via Route 65 (Laguna Honda Boulevard) using Route 60 as a connector. From Portola Drive Route 50 continues to Sloat Boulevard, ending at the Great Highway (Route 95). Sloat Boulevard provides access to San Francisco State University via Route 75 (20th Avenue) and to Lake Merced and western Golden Gate park via Route 85 (34th Avenue).

Eastbound Route 50 cyclists can avoid the complicated triple left turn lane at the intersection of Sloat Boulevard and Portola Drive (Saint Francis Circle) by continuing east onto St. Francis Boulevard and turning left at San Fernando Way (coincident with Route 70) and then right onto Portola Drive.

Generalized Opportunities:

- Market Street, from Steuart Street to Octavia Boulevard
 - Please refer to the SFCTA's Market Street Study on the web at: www.sfcta.org/marketstreet.htm
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and

integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information:
www.mtc.ca.gov.
- Market Street, from Octavia Boulevard to 17th Street
 - Please refer to the Market Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information:
www.mtc.ca.gov.
- Portola Drive, from Corbett Avenue to Sloat Boulevard
 - Please refer to the Portola Drive Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information:
www.mtc.ca.gov.
- Sloat Boulevard, from 19th Avenue to La Playa Street
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information:
www.mtc.ca.gov.

Generalized Constraints:

- Market Street, from Steuart Street to Octavia Boulevard
 - Please refer to the SFCTA's Market Street Study on the web at:
www.sfcta.org/marketstreet.htm
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Adjacent property owners and other stake holders need to be consulted. Market Street is San Francisco's "Main Street"

- Market Street, from Octavia Boulevard to 17th Street
 - Please refer to the Market Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Portola Drive, from Corbett Avenue to Sloat Boulevard
 - Please refer to the Portola Drive Summary Sheets in Appendix 9a.
- Sloat Boulevard, from 19th Avenue to La Playa Street
 - Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This project is located along a transit route and transit vehicle operations will need to be considered. Please consult the San Francisco Bicycle Plan: Policy Framework Document's Bicycle and Transit Policy in Chapter 2 for guidance.
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Market Street, from Steuart Street to Octavia Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Please refer to the SFCTA's Market Street Study on the web at: www.sfcta.org/marketstreet.htm
- Market Street, from Octavia Boulevard to 17th Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Market Street was identified as a "Priority Project", therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommended the treatments that would provide the most continuous bike lanes along this segment of Market Street. Please refer to the Market Street Summary Sheets in Appendix 9a.
- Portola Drive, from Corbett Avenue to Sloat Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.

- Portola Drive was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: option 2 for section A, option 2 for section B, option 2 for section C, option 2 for section D, option 2 for section E, option 1 for section F, option 1 for section G.. Please refer to the Portola Drive Summary Sheets in Appendix 9a.
- Sloat Boulevard, from 19th Avenue to La Playa Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT has obtained grant funds to stripe and sign bike lanes on Sloat Boulevard from The Great Highway to Skyline Boulevard.

ROUTE 55: CRISSY FIELD TO UPPER MARKET STREET AND GLEN PARK BART

Network Improvement Project Location(s):

- Bosworth Street/O’Shaughnessy Boulevard, from San Jose Avenue to Portola Drive
- Masonic Avenue, from Page Street to Geary Boulevard
- O’Shaughnessy Path, from Portola Drive to Bosworth Street
- Presidio Boulevard, from Pacific Avenue to Geary Boulevard

Current Route Description:

Presidio Boulevard & Avenue/Masonic Avenue/Downey Street/ Ashbury Street/Corbett Avenue/Portola Drive/O’Shaughnessy Boulevard

This route provides a connection between the Presidio, the Geary Boulevard shopping district, the Panhandle, Upper Market and Glen Park. Beginning at the intersection of Presidio Boulevard and Lombard Street (Route 4), the route traverses the Presidio, runs between Pacific Heights and Laurel Heights to the Panhandle via Presidio and Masonic Avenues. It connects with Route 10 (Sutter Street/Post Street one-way couplet) to the Financial District and via Route 20 (Turk Street) to the University of San Francisco.

The route continues south on Presidio Avenue and connects with Masonic Avenue at Geary Boulevard. This routing was selected because it avoids the heavily trafficked and channelized intersection of Geary at Masonic. In addition, there is an existing all-way STOP at Presidio Avenue and Geary Boulevard that helps bicyclists cross Geary Boulevard.

From the Panhandle, the route continues via Downey Street (southbound) and Ashbury Street (northbound), Clayton Street, and Corbett Avenue to Portola Drive. Cyclists destined for Stern Grove or Ocean Beach can connect with Route 50 on Portola Drive.

Those bound for Saint Francis Wood or San Francisco State University can branch off on Route 65 (Santa Clara Avenue).

Route 55 continues on O'Shaughnessy Boulevard and Bosworth Street, past Glen Canyon Park to the Glen Canyon neighborhood, where access is provided to northbound Route 45 (Chenery Street), southbound Route 45 (Cayuga Avenue), and Route 70 (Hearst Avenue/Monterrey Boulevard).

O'Shaughnessy Boulevard is especially important to cyclists and was included in the route network because it is the only street directly connecting the Glen Park BART Station, the Glen Park shopping district, School of the Arts, Glen Canyon Park, and the Glen Park and Mount Davidson/Twin Peaks neighborhoods. While O'Shaughnessy Boulevard is used by some, generally experienced cyclists, many others to use the sidewalk bicycle path along its north side.

Generalized Opportunities:

- Bosworth Street/O'Shaughnessy Boulevard, from San Jose Avenue to Portola Drive
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Adjacent property owners and other stake holders need to be consulted. Commercial/ Residential activity creates specific considerations for this corridor. Driveways and on-street parking impacts need to be considered.
 - This project should involve Caltrans
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Masonic Avenue, from Page Street to Geary Boulevard
 - Please refer to the Masonic Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- O'Shaughnessy Path, from Portola Drive to Bosworth Street

Generalized Constraints:

- Bosworth Street/O'Shaughnessy Boulevard, from San Jose Avenue to Portola Drive

- Traffic volumes are high along this corridor. Impacts to the overall traffic capacity need to be mitigated.
 - This project is located along a transit route and transit vehicle operations will need to be considered. Please consult the San Francisco Bicycle Plan: Policy Framework Document's Bicycle and Transit Policy in Chapter 2 for guidance.
 - This project is located in both residential and commercial districts. Any parking changes should consider impacts to adjacent property owners.
 - Adjacent property owners and other stake holders need to be consulted. Commercial/ Residential activity creates specific considerations for this corridor. Driveways, on-street parking impacts need to be considered.
 - This project should involve Caltrans
- Masonic Avenue, from Page Street to Geary Boulevard
 - Please refer to the Masonic Street Summary Sheets in Appendix 9a.
 - O'Shaughnessy Path, from Portola Drive to Bosworth Street
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - Presidio Boulevard, from Pacific Avenue to Geary Boulevard
 - This project is located in both residential and commercial districts. Any parking changes should consider impacts to adjacent property owners.
 - Adjacent property owners and other stake holders need to be consulted. Muni bus yard activity creates specific considerations for this corridor. Driveways, on-street parking impacts need to be considered.

Improvement Options:

- Bosworth Street/O'Shaughnessy Boulevard, from San Jose Avenue to Portola Drive
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT has funds to design improvements to the 1.3-mile bicycle/pedestrian path on the north side of O'Shaughnessy Boulevard (Portola Drive to Elk Street), including replacement of sections of cracked asphalt, a safety shoulder, slurry sealing of entire asphalt section of the path, striping for improved safety, and vegetation pruning for improved visibility. As many path obstacles as possible (such as a MUNI bus shelter and various signs) will be relocated to widen the path's clear space.
- Masonic Avenue, from Page Street to Geary Boulevard
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Masonic Avenue was identified as a "Priority Project", therefore during the planning process there was additional development of conceptual options that received public input and feedback. Public feed back was

supportive, but there are still traffic capacity issues that need to be addressed. Staff recommends that a comprehensive planning project, similar to that undertaken by the SFCTA for Market Street, be undertaken for Masonic. Planning efforts should coordinate with SFgo, since Integrated Transportation Management Systems (ITMS) will most likely be a strong component of bicycle facility improvements. Please refer to the Masonic Street Summary Sheets in Appendix 9a.

- O'Shaughnessy Path, from Portola Drive to Bosworth Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT has obtained grant funds to design improvements to the 1.3-mile bicycle/pedestrian path/sidewalk on the north side of O'Shaughnessy Boulevard (Portola Drive to Elk Street). This includes replacement of sections of cracked asphalt, slurry sealing of entire asphalt section of the path, striping some sections for improved safety, and significant vegetation pruning for improved visibility well as a safety shoulder. As many path obstacles as possible (such as a MUNI bus shelter and various signs) should be relocated to widen the path's clear space for all users, including cyclists, pedestrians, and the disabled. Some minor path relocation and/or widening of some sections should be considered if necessary.
- Presidio Boulevard, from Pacific Avenue to Geary Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.

ROUTE 60: GREAT HIGHWAY TO 3RD STREET (VICENTE STREET/CLIPPER STREET/ CHAVEZ CESAR STREET)

Network Improvement Project Location(s):

- Cesar Chavez Street, from Mississippi Street (I-280) to Kansas Street (US 101)
- Cesar Chavez Street, from Kansas Street (US 101) to Guerrero Street
- Cesar Chavez Street, from Guerrero Street to Sanchez Street
- Woodside Avenue, from Portola Drive to Laguna Honda Boulevard
- Vicente Path, from Lower Great Highway to Great Highway

Current Route Description:

Cesar Chavez Street/Clipper Street/Vicente Street

Route 60 connects Route 5 (Third Street) with Vicente Street, via Cesar Chavez, Sanchez Street, Clipper Street, Laguna Honda Boulevard, Woodside Avenue, and Portola Drive. This crosstown route intersects many north-south routes, offering connections to many parts of the City.

To provide a connection to Vicente Street, Woodside Avenue (westbound), Dewey Boulevard, Taraval Street, Forest Side Avenue, Ulloa Street, and 16th Avenue are used. In the eastbound direction, Laguna Honda Boulevard is used instead of Woodside

Avenue since its lower traffic volumes and less steep grade are more suitable for uphill cycling. In addition the left turn at Portola Drive is more easily made from Laguna Honda Boulevard (a T intersection).

West of 16th Avenue, Vicente Street, which serves the Lower Sunset on the north Side of Stern Grove is recommended, since it is flatter than Ulloa Street. It has no street car tracks and less traffic compared to Taraval Street.

Generalized Opportunities:

- Cesar Chavez Street, from Mississippi Street (I-280) to Kansas Street (US 101)
 - DPT applied for Regional Bicycle and Pedestrian Program funds to remove north side parking to provide room to stripe bike lanes
 - Please refer to the Cesar Chavez Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Cesar Chavez Street, from Kansas Street (US 101) to Guerrero Street
 - Please refer to the Cesar Chavez Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Cesar Chavez Street, from Guerrero Street to Sanchez Street
 - Please refer to the Cesar Chavez Street Summary Sheets in Appendix 9a.
- Woodside Avenue, from Portola Drive to Laguna Honda Boulevard
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Vicente Path, from Lower Great Highway to Great Highway
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.

Generalized Constraints:

- Cesar Chavez Street, from Mississippi Street (I-280) to Kansas Street (US 101)
 - Please refer to the Cesar Chavez Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Cesar Chavez Street, from Kansas Street (US 101) to Guerrero Street

- Please refer to the Cesar Chavez Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Cesar Chavez Street, from Guerrero Street to Sanchez Street
 - Please refer to the Cesar Chavez Street Summary Sheets in Appendix 9a.
- Woodside Avenue, from Portola Drive to Laguna Honda Boulevard
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.
 - Adjacent property owners and other stake holders need to be consulted. Laguna Honda Hospital activity creates specific considerations for this corridor. Driveways and on-street parking impacts need to be considered.
- Vicente Path, from Lower Great Highway to Great Highway
 - Consult Rec and Park Department

Improvement Options:

- Cesar Chavez Street, from Mississippi Street (I-280) to Kansas Street (US 101)
 - Cesar Chavez Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: option 1 for section A, option 2 for section B (highly dependant on the affect to transit and pedestrians), and option 1 for section C (which DPT has applied for funds for and is implementing with the support of the SFBC and BAC).
 - Please refer to the Cesar Chavez Summary Sheets in Appendix 9a.
- Cesar Chavez Street, from Kansas Street (US 101) to Guerrero Street
 - This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Cesar Chavez Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: option 1 for section A, option 2 for section B (highly dependant on the affect to transit and pedestrians), and option 1 for section C (which DPT has applied for funds for and is implementing with the support of the SFBC and BAC).
 - Please refer to the Cesar Chavez Summary Sheets in Appendix 9a.
- Cesar Chavez Street, from Guerrero Street to Sanchez Street

- This potential project was identified as a Study Area within the Bicycle Plan: Policy Framework.
 - Cesar Chavez Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends: option 1 for section A, option 2 for section B (highly dependant on the affect to transit and pedestrians), and option 1 for section C (which DPT has applied for funds for and is implementing with the support of the SFBC and BAC).
 - Please refer to the Cesar Chavez Summary Sheets in Appendix 9a.
- Woodside Avenue, from Portola Drive to Laguna Honda Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Vicente Path, from Lower Great Highway to Great Highway
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Laguna Honda Boulevard, from Portola Drive to Woodside Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - DPT has obtained grant funds to stripe and sign bike lanes on Laguna Honda Boulevard from Portola Drive to Woodside Avenue.

ROUTE 61: ARGUELLO BOULEVARD/SHERIDAN AVENUE (IN THE PRESIDIO)

Network Improvement Project Location(s):

Please refer to the *Presidio Trust Master Plan* and the Presidio Trust’s *Trails and Bikeways Master Plan* available on the web at:

www.presidio.gov/TrustManagement/TrustDocuments/EnvironmentalPlans/

Current Route Description:

Arguello Boulevard and Sheridan Avenue are the bicycle routes in the Presidio to connect Route 4 (Lincoln Boulevard) and Route 65 (Washington Boulevard).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 65: THE PRESIDIO/GOLDEN GATE PARK/LAGUNA HONDA HOSPITAL/WEST PORTAL/JUNIPERO SERRA BOULEVARD

Network Improvement Project Location(s):

- Seventh Avenue, from Kirkham Street to Lawton Street
- Fifth Avenue Path, from Martin Luther King Jr. Drive to Lincoln Way
- Conservatory Drive West, from Arguello Boulevard to JFK Drive
- Laguna Honda Boulevard, from Plaza Street to Dewey Boulevard

Current Route Description:

Washington Boulevard/Arguello Boulevard/7th Avenue/Laguna Honda Boulevard/Dewey Boulevard/Santa Clara Avenue

Route 65 will provides a route parallel to and east of Route 75 (23rd Avenue/20th Avenue) to SF State University. From Lincoln Boulevard (Routes 2 and 95) in the Presidio, the southbound route is via Ralston, Greenough, and Kobbe Avenues, Harrison Boulevard to Washington Boulevard. The northbound route within the Presidio follows Arguello, Washington, and Lincoln Boulevards, to Merchant Road and through the toll plaza undercrossing.

Heading southbound, Route 65 continues via Washington and Arguello Boulevards, then Conservatory Drive (in Golden Gate Park), connecting the Golden Gate Bridge and Golden Gate Park.

In the park, the route continues via Bowling Green Drive and exits via a short path to Lincoln Way at 5th Avenue. The route continues on Hugo Street, then south on 6th Avenue. At Parnassus Avenue, Route 40 takes bicyclists east to the UC Medical Center, the Castro, Mission, and Potrero Hill. From 6th Avenue Route 65 jogs west on Kirkham Street, and continues south on 7th Avenue. The route continues via Laguna Honda Boulevard, Dewey Boulevard, Claremont Boulevard, jogs on Portola Drive to Santa Clara Avenue, jogs on Monterey Boulevard to San Benito Way, jogs on Ocean Avenue to Cerritos Avenue, and ends at Route 75 (Lunado Way) at Mercedes and Lunado Ways. It provides access to San Francisco State University from the Haight, areas north of the Haight and the inner Richmond.

Generalized Opportunities:

- Seventh Avenue, from Kirkham Street to Lawton Street
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
 - DPT Livable Streets will do a traffic calming study of the 7th Avenue Corridor within the next five years that could consider bike lanes on 7th Avenue between Lawton Street and Lincoln Way.
- Fifth Avenue Path, from Martin Luther King Jr. Drive to Lincoln Boulevard
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.

- This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- This project should involve Department of Recreation and Park
- Conservatory Drive West, from Arguello Boulevard to JFK Drive
 - This project should involve Department of Recreation and Park
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Laguna Honda Boulevard, from Plaza Street to Dewey Boulevard
 - Please refer to the Laguna Honda Boulevard Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.

Generalized Constraints:

- Seventh Avenue, from Kirkham Street to Lawton Street
 - There is not sufficient width on 7th Avenue to Stripe bike lanes without removal of a traffic lane or parking.
- Fifth Avenue Path, from Martin Luther King Jr. Drive to Lincoln Boulevard
 - Golden Gate Park Master Plan
- Conservatory Drive West, from Arguello Boulevard to JFK Drive
 - Golden Gate Park Master Plan
- Laguna Honda Boulevard, from Plaza Street to Dewey Boulevard
 - Please refer to the Laguna Honda Boulevard Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

- Seventh Avenue, from Kirkham Street to Lawton Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Depending on the outcome of Livable Streets' traffic calming study, bike lanes may be able to be striped on all or part of Seventh Avenue between Lawton Street and Lincoln Way.

- If bike lanes cannot be striped, Shared Lane Pavement Markings “Sharrows” should be installed.
- Fifth Avenue Path, from Martin Luther King Jr. Drive to Lincoln Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Conservatory Drive East, from Arguello Boulevard to JFK Drive
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Conservatory Drive East, a one-way northbound street, is part of northbound Bicycle Route 65 that connects Arguello Boulevard to the Panhandle Path. A southbound 0.3 miles contra-flow bike lane (separated by a double-yellow line) can be striped and signed without reducing travel lanes as the necessary width for this bike lane currently exists and there is no parking on its side of the street. It shortens the southbound bicycle trip distance by approximately 0.3 mile as compared to the current route via Conservatory Drive West and JFK Drive. It would also improve safety as some cyclists now ride the wrong way on one-way Conservatory Drive East. DPT has obtained grant funds for this project.
- Laguna Honda Boulevard, from Plaza Street to Dewey Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Laguna Honda Boulevard was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff has applied for and obtained funds to develop PS&Es to increase the width of Laguna Honda Boulevard to improve conditions for bicycles, while maintaining the left turn pocket into the hospital.
 - Construction Estimates will be generated from the PS&Es

ROUTE 66: FARMER'S MARKET/BERNAL HEIGHTS

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

Route 66 accesses the popular Alemany Farmer's Market. Branching off Route 45, it continues via Richland Avenue, Lesse Street and Crescent Avenue, providing this much needed connection.

Generalized Opportunities:

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

- Although the 1997 proposes this route as a dead end route, there is an opportunity to extend the route into Bernal Heights

Generalized Constraints:

- Topography of Bernal Heights
- Narrow lane widths
- Muni Route
- Commercial Parking
- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

- Extend Route 66 along Peralta Avenue to Cortland Avenue. Southbound cyclists would turn left on to Mission Street (signalized intersection), right on Santa Marina Street, and right again on to the proposed San Jose Bike Lanes.

ROUTE 68: EVANS AVENUE

Network Improvement Project Location(s):

- Evans Street, from 3rd Street to Cesar Chavez Street

Current Route Description:

Until general access is permitted to the Hunters Point Naval Shipyard site, Route 68 will begin at the gate at Innes Avenue and Donahue Street.

Outside the shipyard, the Route follows Innes Avenue, Hunters Point Boulevard, and Evans Avenue reaching Route 60 (Cesar Chavez Street). Route 7 (Phelps Street) is a major connector between Route 68 and route 70 (Palou Avenue).

Generalized Opportunities:

- Evans Street, from 3rd Street to Cesar Chavez Street
 - This route will serve future development of the Hunters Point Naval Shipyard site. Given its potential for redevelopment, it is extremely important to plan for good bicycle access and to incorporate needed improvements into the required transportation infrastructure. Route 68 will eventually form a loop through the shipyard site by connecting with Route 70.
 - Coordination with the Bay Trail Project . Currently, the Bay Trail does not follow Evans Avenue, but rather, follows Cargo Way. Cargo Way offers direct access to the shoreline at Heron's Head Park, and will serve the redeveloped Hunter's Point Shipyard. Cargo Way is currently not on the Bicycle Route Network. It is scheduled to be studied for potential inclusion within the Bicycle Route Network.

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Generalized Constraints:

- Evans Street, from 3rd Street to Cesar Chavez Street
 - Care needs to be taken to minimize potential truck-bicycle conflicts on Evans Avenue and further study is needed to determine whether potential truck-bicycle conflicts can be adequately minimized on this route.

Improvement Options:

- Evans Street, from 3rd Street to Cesar Chavez Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Stripe Bike Lanes between 3rd and Cesar Chavez Streets
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

ROUTE 69: BATTERY CAULFIELD ROAD/15TH AVENUE/FUNSTON AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

This route provides a connection between Route 65 (Washington Boulevard) in the Presidio and Route 30 (JFK Drive in Golden Gate Park). From Washington Boulevard in the Presidio, this route follows Battery Caulfield Road, Wedemeyer Street, 15th Avenue, Cabrillo Street, Funston Avenue, and the existing path in Golden Gate Park. This route serves the Inner Richmond District by providing access to both San Francisco State University via Route 75 (20th Avenue) and to the Golden Gate Bridge and Marin County via Route 65.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 70: HUNTER'S POINT TO EXCELSIOR (VIA SILVER AVE.) TO GLEN PARK TO WEST PORTAL

Network Improvement Project Location(s):

- Monterey Boulevard , from San Jose Avenue to Junipero Serra Boulevard
- Silver Avenue, from Alemany Boulevard to Oakdale Avenue
- Palou Avenue, from 3rd Street to Phelps Street
- Phelps Street, from Oakdale Avenue to Palou Avenue

Current Route Description:

Palou Avenue/Silver Avenue/Hearst Avenue/Monterey Boulevard

Until general access to the shipyard site is opened along this route, Route 70 starts at Griffith Street. It continues via Palou Avenue, jogging onto Oakdale Avenue via Phelps Street and then continuing southeast via Silver Avenue. Connections are provided to Route 7 (Keith Street/Palou Avenue/Phelps Street), Route 5 (Third Street), Route 170 (Oakdale Avenue), Route 25 (Bayshore Boulevard), and Route 45 (Cayuga Avenue). It provides access for the residents of Bayview and Hunters Point to the shipyard site, Glen Park BART Station, City College, and the West Portal District.

At Cayuga Avenue, this route is coincident with Route 45 to Diamond Street in Glen Park, where it intersects Route 55 (Bosworth Street/O'Shaughnessy Boulevard). The route continues via Circular and Hearst Avenues to Genessee Street. City College is served by connecting Route 770 (Genessee Street/Phelan Avenue). Route 70 then continues as a signed Class III route via Monterey Boulevard, Santa Clara Avenue, and Saint Francis Boulevard to Saint Francis Circle. From the Saint Francis Wood area, cyclists can access northeast/west Route 50 (Portola Drive/Sloat Boulevard) and north/south Route 65 (Santa Clara Avenue).

Generalized Opportunities:

- Monterey Boulevard , from San Jose Avenue to Junipero Serra Boulevard
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Silver Avenue, from Alemany Boulevard to Oakdale Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Palou Avenue, from 3rd Street to Phelps Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- Coordination with the Bay Trail Project should be explored to match alignments.
- Phelps Street, from Oakdale Avenue to Palou Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Monterey Boulevard , from San Jose Avenue to Junipero Serra Boulevard
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Silver Avenue, from Alemany Boulevard to Oakdale Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Palou Avenue, from 3rd Street to Phelps Street
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Phelps Street, from Oakdale Avenue to Palou Avenue
 - Coordination with the Bay Trail Project should be explored to match alignments.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Monterey Boulevard , from San Jose Avenue to Junipero Serra Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Silver Avenue, from Alemany Boulevard to Oakdale Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Palou Avenue, from 3rd Street to Phelps Street

- This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
- Explore striping Bike Lanes
- Phelps Street, from Oakdale Avenue to Palou Avenue
 - This segment was identified as a recommended change to the existing Bicycle Route Network within the Bicycle Plan: Policy Framework.
 - Explore striping Bike Lanes

ROUTE 75: SEACLIFF TO GGP TO STERN GROVE TO DALY CITY BART

Network Improvement Project Location(s):

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way
- Buckingham Way, from 19th Avenue to 20th Avenue
- Twentieth Street, from Sloat Boulevard to Buckingham Way
- Twentieth Street, from Wawona Street to Lincoln Way

Current Route Description:

**25th Avenue/23rd Avenue/Transverse Drive/20th Avenue/
Lunado Way/Beverly Street/Daly City BART Station**

This route serves the Richmond District, Golden Gate Park, Inner Sunset, Parkside, Stern Grove, San Francisco State University (SFSU), Ingleside, and the Daly City BART Station. A spur, Route 775 (San Francisco State University), provides a connection to SFSU.

Beginning with bike lanes on 25th Avenue between El Camino del Mar and Lake Street, the route jogs east via the Lake Street bike lanes, then south via 23rd Avenue. The route jogs east on Fulton Street and south into Golden Gate park via a new path constructed in 2001. It continues via Transverse Drive to a rehabilitated path connecting to 20th Avenue at Lincoln Way, where a traffic signal was installed to facilitate cyclists crossing Lincoln Way. Twentieth Avenue is recommended since 23rd Avenue is not a through street south of Sloat Boulevard. Twentieth Avenue is preferred to 19th Avenue since it has much less traffic but is just as direct. However, 20th Avenue has many two-way STOP signs. Traffic calming techniques could be pursued to reduce the number of stops along 20th Avenue.

For travel through Stern Grove, the existing path was rehabilitated and modifications were made to the north gate for round the clock access. The southbound route continues west on Sloat Boulevard, south on 21st Avenue (either from the left lane or using the crosswalk), and east on Ocean Avenue to 20th Avenue. The northbound from continues on 20th Avenue, then east on Sloat Boulevard, accessing the Stern Grove path by crossing Sloat Boulevard at 19th Avenue using the west crosswalk.

The route continues south via 20th Avenue, through the Stonestown Shopping Center, east on Winston Drive and Mercedes Way, south on Lunado Way, Beverly Street, 19th Avenue, and Saint Charles Avenue. In 2002 major improvements were made to the two

paths connecting the two dead-end segments of Saint Charles Avenue to Brotherhood Way and a traffic signal was installed to facilitate cyclists crossing Brotherhood Way, thus providing a much more direct bicycle route south along Saint Charles Avenue to the Daly City BART Station.

Generalized Opportunities:

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way
 - Please refer to the 19th Avenue Summary Sheets in Appendix 9a.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Buckingham Way, from 19th Avenue to 20th Avenue
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Twentieth Street, from Buckingham Way to Sloat Boulevard
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Twentieth Street, from Wawona Street to Lincoln Way
 - Identified within the Metropolitan Transportation Commission (MTC) Regional Bicycle Plan
 - Impacts on pedestrians, especially on senior citizens and people with mobility impairments, should be considered. Bicycle improvements along this corridor could potentially improve pedestrian safety.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.

Generalized Constraints:

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way
 - Please refer to the 19th Avenue Summary Sheets in Appendix 9a.
- Buckingham Way, from 19th Avenue to 20th Avenue
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Twentieth Street, from Wawona Street to Lincoln Way
 - This project is located in a residential district. Any parking changes should consider impacts to adjacent property owners.

Improvement Options:

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Nineteenth Avenue was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Taking this into consideration, staff recommends option 2, PS&Es should be developed for this option
- Twentieth Avenue, from Wawona Street to Irving Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore striping bike lanes.
- Buckingham Way, from 19th Avenue to 20th Avenue
 -

ROUTE 84: OCEAN AVENUE

Network Improvement Project Location(s):

- Ocean Avenue, from Mission Street to Junipero Serra Boulevard

Current Route Description:

This route serves as a connection between the Excelsior District and Stern Grove. From Route 45 (Cayuga Avenue), Ocean Avenue provides access to the Balboa Park BART Station and to Route 50 (Sloat Boulevard), via Route 75 (20th Avenue). Route 84 east of Phelan Avenue provides a more direct connection to northbound Route 45 than Geneva Avenue (Route 90). However, Ocean Avenue is a desirable route because in combination with Geneva Avenue (Route 90) it forms a direct link between the southeast part of the City and Stern Grove.

Generalized Opportunities:

- Ocean Avenue, from Mission Street to Junipero Serra Boulevard
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.

Generalized Constraints:

- Ocean Avenue, from Mission Street to Junipero Serra Boulevard

- This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Ocean Avenue, from Mission Street to Junipero Serra Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.

ROUTE 85: LEGION OF HONOR DRIVE/34TH AVENUE/LAKE MERCED BOULEVARD

Network Improvement Project Location(s):

- Thirty-Fourth Avenue Path, from Polo Field Path to Lincoln Way
- Sunset Path, from Ocean Avenue to Lake Merced Boulevard
- Lake Merced Boulevard, from Skyline Boulevard to John Muir Drive
- Polo Field Path, from Polo Field to 34th Avenue Path

Current Route Description:

This route connects Sea Cliff, Lincoln Park, outer Richmond, Golden Gate Park, Sunset, Parkside, Lake Merced neighborhoods, and San Mateo County, via 34th Avenue and Lake Merced Boulevard. It begins along Legion of Honor Drive at Route 95 (El Camino del Mar) in Lincoln Park and continues on 34th Avenue.

Route 85 jogs to 36th Avenue at Cabrillo Street (Route 20). From 36th Avenue it is a signed route to Route 30 (JFK Drive in Golden Gate Park). It continues south through the park via the north access road to the Polo Field, the Polo Field bicycle track, and a path to Lincoln Way and 34th Avenue. It connects to the Sunset Boulevard path under crossing of Lincoln Way, and Irving Street to 34th Avenue.

Thirty-fourth Avenue and Clearfield Drive should be designated as Bicycle Priority Streets between Lincoln Way and Lake Merced Boulevard.

Between Vicente and Yorba Streets, 34th Avenue becomes one-way southbound. Therefore, the northbound route jogs on Yorba Street and travels on 35th Avenue to Vicente Street then rejoins 34th Avenue. The route continues via 34th Avenue and Clearfield Drive.

From the intersection of Clearfield Drive and Ocean Avenue to Lake Merced Boulevard at Middlefield Drive, the recommended southbound route is Ocean Avenue, the path just west of Sunset Boulevard, and Lake Merced Boulevard. The northbound route is Middlefield Drive, Gellert Drive, and Clearfield Drive. The path west of Sunset Boulevard provides access to either Lake Merced Boulevard or the adjacent multi-use path around Lake Merced (Route 885).

Generalized Opportunities:

- Thirty-Fourth Avenue Path, from Polo Field Path to Lincoln Boulevard
 - Consult Rec and Park Department and the Golden Gate Park Master Plan
- Sunset Path, from Ocean Avenue to Lake Merced Boulevard
 - Consult Rec and Park Department and the Golden Gate Park Master Plan
- Lake Merced Boulevard, from Skyline Boulevard to John Muir Drive
 - Consult Rec and Park Department and the Golden Gate Park Master Plan
- Polo Field Path, from Polo Field to 34th Avenue Path
 - Consult Rec and Park Department and the Golden Gate Park Master Plan

Generalized Constraints:

- Thirty-Fourth Avenue Path, from Polo Field Path to Lincoln Boulevard
 - Consult Rec and Park Department and the Golden Gate Park Master Plan
- Sunset Path, from Ocean Avenue to Lake Merced Boulevard
 - Consult Rec and Park Department and the Golden Gate Park Master Plan
- Lake Merced Boulevard, from Skyline Boulevard to John Muir Drive
 - Consult Rec and Park Department and the Golden Gate Park Master Plan
- Polo Field Path, from Polo Field to 34th Avenue Path
 - Consult Rec and Park Department and the Golden Gate Park Master Plan

Improvement Options:

- Thirty-Fourth Avenue Path, from Polo Field Path to Lincoln Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework, consult with Rec and Park Staff to proceed with resurfacing, striping, and signage
- Sunset Path, from Ocean Avenue to Lake Merced Boulevard
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework, consult with Rec and Park Staff to proceed with resurfacing, striping, and signage
- Lake Merced Boulevard, from Skyline Boulevard to John Muir Drive
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework, consult with Rec and Park Staff to proceed with resurfacing, striping, and signage
- Polo Field Path, from Polo Field to 34th Avenue Path
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework, consult with Rec and Park Staff to proceed with resurfacing, striping, and signage

ROUTE 86: WINSTON DRIVE/LAKE MERCED BOULEVARD

Network Improvement Project Location(s):

- Winston Drive, from Junipero Serra Boulevard to Lake Merced

Current Route Description:

This route connects Route 84 (Ocean Avenue) and Route 91 (John Muir Drive/Skyline Boulevard). It provides access to San Francisco State University, the Stonestown Shopping Center, and Lake Merced. Although there are several MUNI bus routes and the traffic can be heavy on the portion of Winston Drive through the Stonestown Shopping Center, this route also provides direct access to this major destination. The route runs from Ocean Avenue via Cedro Avenue, Mercedes Way, Winston Drive, and Lake Merced Boulevard, to Skyline Boulevard (Route 91). At Lunado Way, the Ingleside District to the south and the Daly City BART Station are accessible via Route 75 (Lunado Way and Beverly Street). At Lake Merced Boulevard, connections can be made with Route 85 south to San Mateo County and north to the Sunset and Richmond districts.

Generalized Opportunities:

- Winston Drive, from Junipero Serra Boulevard to Lake Merced
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Generalized Constraints:

- Winston Drive, from Junipero Serra Boulevard to Lake Merced
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

- Winston Drive, from Junipero Serra Boulevard to Lake Merced
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve Bicycle Route Signage
 - Explore striping bike lanes.
 - Explore installing Shared Lane Pavement Markings "Sharrows"

ROUTE 90: LAKE MERCED/CITY COLLEGE/COW PALACE

Network Improvement Project Location(s):

- Geneva Avenue, from Paris Street to Ocean Avenue
- Holloway Avenue, from 19th Avenue to Plymouth Street Avenue
- Plymouth Avenue, from Ocean Avenue to Holloway Avenue

Current Route Description:

Beginning at Route 5 (Bayshore Boulevard/Third Street/The Embarcadero) in San Mateo County, this route runs along Geneva, Harold, and Holloway Avenues, and Font

Boulevard. This provides an important route connecting the Balboa Park BART Station with San Francisco State University. Font Boulevard connects this route to Lake Merced Boulevard (Routes 85 and 885). Plymouth Avenue connects Holloway and Ocean Avenues because there is a left-turn prohibition from westbound Ocean Avenue to southbound Harold Avenue. In addition, there are no painted crosswalks at the Harold Avenue/Ocean Avenue intersection. The corresponding left from Ocean to Plymouth Avenues is more easily made since there is a traffic signal at this intersection.

A short spur (Route 990) provides direct access to City College from Geneva Avenue. See Route 990.

Generalized Opportunities:

- Geneva Avenue, from Paris Street to Ocean Avenue
 - Since a portion of this route (as well as portions of Routes 5, 805, 905, 45, 75, 85, and 95) extend into San Mateo County, San Francisco should work with the cities of Daly City and Brisbane to make arrangements for signing these routes within the northern parts of those cities to better direct cyclists.
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Holloway Avenue, from 19th Avenue to Plymouth Avenue
 - Connects San Francisco State College and San Francisco State College
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Plymouth Avenue, from Ocean Avenue to Holloway Avenue
 - Connects San Francisco State College and San Francisco State College
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Generalized Constraints:

- Geneva Avenue, from Paris Street to Ocean Avenue
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

- Holloway Avenue, from 19th Avenue to Plymouth Avenue
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework
- Plymouth Avenue, from Ocean Avenue to Holloway Avenue
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

- Geneva Avenue, from Paris Street to Ocean Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve Bicycle Route Signage
 - Explore striping bike lanes.
 - Explore installing Shared Lane Pavement Markings “Sharrows”
- Holloway Avenue, from 19th Avenue to Plymouth Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve Bicycle Route Signage
 - Explore striping bike lanes.
 - Explore installing Shared Lane Pavement Markings “Sharrows”
- Plymouth Avenue, from Ocean Avenue to Holloway Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve Bicycle Route Signage
 - Explore striping bike lanes.
 - Explore installing Shared Lane Pavement Markings “Sharrows”

ROUTE 91: SKYLINE BOULEVARD/JOHN MUIR DRIVE

Network Improvement Project Location(s):

- Lake Merced Path, entire path around Lake Merced

Current Route Description:

This route serves the south and west sides of Lake Merced. It connects Route 50 (Sloat Boulevard) with Route 85 (Lake Merced Boulevard) at the San Mateo County Line. It also provides a connection with Route 95 (Skyline Boulevard/The Great Highway).

Route 91 is a signed route on Skyline Boulevard and John Muir Drive. As an alternative to this on-street route south of Lake Merced Boulevard, cyclists can use the paved path along Lake Merced.

Generalized Opportunities:

- Lake Merced Path, entire path around Lake Merced
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Generalized Constraints:

- Lake Merced Path, entire path around Lake Merced
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

- Lake Merced Path, entire path around Lake Merced
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework, consult with Rec and Park Staff to proceed with resurfacing, striping, and signage

ROUTE 95: LINCOLN BOULEVARD/EL CAMINO DEL MAR/GREAT HIGHWAY/SKYLINE BOULEVARD

Network Improvement Project Location(s):

- Point Lobos Avenue, from Great Highway to 48th Avenue
- Great Highway, from Balboa Street to Point Lobos Avenue

Current Route Description:

This major route crosses San Francisco from the Golden Gate Bridge to San Mateo County. It connects the Presidio, Sea Cliff, Outer Richmond, Golden Gate Park, Outer Sunset, Parkside, and Lake Merced. In addition it is also the San Francisco portion of the Pacific Coast Bicycle Route (a state marked route along the Pacific Coast from Oregon to Mexico), providing connections to Marin County and points north and San Mateo County and points south.

Beginning the Golden Gate Bridge, this route continues via the undercrossing of the toll plaza, Merchant Road and Lincoln Boulevard, El Camino del Mar, Route 10 (30th Avenue/Clement Street/Seal Rock Drive) to the western section of El Camino del Mar, and Point Lobos Avenue to the Great Highway.

The Great Highway offers two routes for cyclists to choose from: an on-street route on the roadway of the Great Highway and a parallel multi-use path between the roadway and the beach. The on-street route is popular with many cyclists due to its location and wide shoulders. It carries high traffic volumes and fast traffic. Sand blown onto the roadway is frequently a problem, causing the road to be closed periodically. Sand build-up is a particular problem on the west side in the area provided for pedestrians (or bicyclists) to wait to cross at the signalized intersections. The adjacent multi-use path is slow and narrow, but is suitable for leisurely cyclists whose purpose is primarily to ride near the ocean.

The route continues to San Mateo County via Skyline Boulevard (State Highway 35). Highway 35 has wide paved shoulders.

Generalized Opportunities:

- Point Lobos Avenue, from Great Highway to 48th Avenue
 - National Park Service and the Cliff House Restoration
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.
- Great Highway, from Balboa Street to Point Lobos Avenue
 - National Park Service and the Cliff House Restoration
 - This bicycle facility is identified as part of the Regional Bikeway System within the MTC Regional Bicycle Plan. For more information: www.mtc.ca.gov.

Generalized Constraints:

- Point Lobos Avenue, from Great Highway to 48th Avenue
 - Narrow Lane Widths
 - This bicycle facility is located on both a Muni route and a Transit Preferential Street (TPS). Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.
- Great Highway, from Balboa Street to Point Lobos Avenue
 - Narrow Lane Widths
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

- Point Lobos Avenue, from Great Highway to 48th Avenue

- This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
- Improved Uphill (north bound) shoulder
- Explore Potential northbound bike lane
- Great Highway, from Balboa Street to Point Lobos Avenue
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improved Uphill (north bound) shoulder
 - Explore Potential northbound bike lane

ROUTE 98: SAGAMORE STREET/BROTHERHOOD WAY

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

Route 98 provides a connection between the Excelsior and Ingleside Districts and access between Route 45 (Alemany Boulevard) and Route 75 (Beverly Street), thereby providing access to SFSU, the San Francisco Golf Club, and Lake Merced.

Generalized Opportunities:

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Generalized Constraints:

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework

Improvement Options:

ROUTE 106: MARINA (OCTAVIA STREET)

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process.

Current Route Description:

This route connects Route 6 (Greenwich Street/Octavia Street) with 4 (Francisco Street) via Octavia Street. Route 106 provides a connection between Cow Hollow and the Fisherman's Wharf Area. It should receive traffic calming treatment, as recommended for the portions of Routes 4 and 6 that it connects.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 123: KANSAS STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route connects Route 23 (7th Street/8th Street) and Route 36 (Townsend Street/13th Street) with Route 40 (17th Street), which in turn, connects with Route 25 (Potrero Avenue). It provides access to Potrero Hill from the Civic Center and the CalTrain Depot (via Townsend Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 125: ELEVENTH STREET (SOUTHBOUND - BETWEEN MARKET AND HOWARD STREETS)

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This is a two block connector between eastbound Route 50 (Market Street) and southbound Route 25 (11th Street) or eastbound Route 30 (Howard Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 134: MIDDLE DRIVE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Southbound cyclists on Route 75 (Transverse Drive) who wish to connect to Route 34 (Middle Drive/Martin Luther King Jr. Drive) can access the Middle Drive Multi-use Path directly without having to use West Drive.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 130: BAKER STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route provides access between the Panhandle Path (Route 30) and Page Street (Route 32). It also provides a more direct routing for Route 30 ("Wiggle") cyclists to connect with the Panhandle Path without out of the way travel via Hayes Street (temporary Route 30).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 165: JACKSON STREET/CHERRY STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Route 165 provides southbound cyclists on Route 65 (Presidio Avenue) a short-cut to the Pacific Heights and Marina Districts. The route begins off of Route 65 on to Jackson Street and then on to Cherry Street, where a connection is established to Route 10 (Clay Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 170: OAKDALE AVENUE

Network Improvement Project Location(s):

- Oakdale, from Bayshore Boulevard to 3rd Street

Current Route Description:

This route will serve as a connector between Bayview and Bayshore Boulevard. It begins at Route 70 (Silver Avenue/Oakdale Avenue) at Quint Street and continues via Oakdale Avenue to Route 25 (Bayshore Boulevard).

Generalized Opportunities:

- Oakdale, from Bayshore Boulevard to 3rd Street
 - Please refer to the Oakdale Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Oakdale, from Bayshore Boulevard to 3rd Street
 - Please refer to the Oakdale Street Summary Sheets in Appendix 9a.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Oakdale, from Bayshore Boulevard to 3rd Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Oakdale Street was identified as a “Priority Project”, therefore during the planning process there was additional development of conceptual options that received public input and feedback. Please refer to the Oakdale Street Summary Sheets in Appendix 9a.
 - DPT has obtained grant funds for Design, Engineering, and Construction have been obtained to stripe and sign new bike lanes on Oakdale Avenue from Bayshore Boulevard to Selby Street.

ROUTE 195: KOBBE AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This is a one block connector between Route 95 (Lincoln Boulevard) and Route 65 (Washington Boulevard).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 198: GOETHE STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Route 198 provides a direct route to San Jose Avenue (Route 45) from eastbound Route 98 (Brotherhood Way) via Goethe Street. Route 198 connects the Sunset District to San Jose Avenue and Mission Street in Daly City.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 202: PRESIDIO (BATTERY EAST ROAD MULTI-USE PATH)

Network Improvement Project Location(s):

- Battery East Path, from Lincoln Boulevard to Golden Gate Bridge

Current Route Description:

This route connects Route 2 (Lincoln Boulevard) and the Golden Gate Bridge walkways (Route 95) via a multi-use path along Battery East Road. It provides an alternative to cycling through the Golden Gate Bridge parking lot roadway (Routes 295).

Generalized Opportunities:

- Battery East Path, from Lincoln Boulevard to Golden Gate Bridge
 - Presidio Trails and Bikeways Master Plan at
http://www.nps.gov/goga/admin/planning/trails_bikeways/index.htm identifies this segment for improvements
 - The Bay Trail Project provided grant funding to the Golden Gate National Recreation Area to investigate ways to improve bike and pedestrian access

from and to the Golden Gate Bridge from Crissy Field, the Battery East pathway, Lincoln and Long Avenues. The study prepared broad engineering analysis and a draft set of plans for implementation. The study is not yet finalized as of this writing. It should provide better information regarding this area.

Generalized Constraints:

- Battery East Path, from Lincoln Boulevard to Golden Gate Bridge
 - Within the jurisdiction of the National Park Service and the Presidio Trust

Improvement Options:

- Battery East Path, from Lincoln Boulevard to Golden Gate Bridge
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Explore improving path
 - Explore uphill bike lane

ROUTE 210: BROADWAY TUNNEL

Network Improvement Project Location(s):

- Broadway Tunnel - entire length – Larkin to Powell Streets

Current Route Description:

This spur route, for experienced cyclists only, follows Broadway through the tunnel between Mason and Polk Streets. This route provides direct access across the City from The Embarcadero to the Cliff House. Beginning at The Embarcadero (Route 5).

Generalized Opportunities:

- Broadway Tunnel - entire length – Larkin to Powell Streets
 - Please refer to the Broadway Tunnel Summary Sheets in Appendix 9a.

Generalized Constraints:

- Broadway Tunnel - entire length – Larkin to Powell Streets
 - Please refer to the Broadway Tunnel Summary Sheets in Appendix 9a.

Improvement Options:

- Broadway Tunnel - entire length – Larkin to Powell Streets
 - The Broadway Tunnel was identified as a “Priority Project” and, therefore, during the planning process, was explored further with public input and feedback received on the various options developed. Staff recommends Option 1 for a short term option for the tunnel. Public comments cited Option 4 as desirable. Although Option 4 should also be pursued, it should be noted that Option 4 has significant cost issues and it also may not adequately address some pedestrian and ADA concerns. Please refer to the Broadway Tunnel Summary Sheets in Appendix.

ROUTE 234: MCCLAIN'S BEND

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Provide access from Route 34 (Martin Luther King Jr. Drive) to Route 30 (JFK Drive).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 295: GOLDEN GATE BRIDGE PARKING LOT ROADWAY

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route connects Route 2 (Lincoln Boulevard) and the Golden Gate Bridge walkways (Route 95) via the Golden Gate Bridge parking lot roadway.

Generalized Opportunities:

- Please refer to the Presidio Trails and Bikeways Master Plan at http://www.nps.gov/goga/admin/planning/trails_bikeways/index.htm

Generalized Constraints:

- Please refer to the Presidio Trails and Bikeways Master Plan at http://www.nps.gov/goga/admin/planning/trails_bikeways/index.htm

Improvement Options:

- Please refer to the Presidio Trails and Bikeways Master Plan at http://www.nps.gov/goga/admin/planning/trails_bikeways/index.htm

Planning Level Cost Estimate:

- Please refer to the Presidio Trails and Bikeways Master Plan at http://www.nps.gov/goga/admin/planning/trails_bikeways/index.htm

ROUTE 310: TAYLOR STREET/CALIFORNIA STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route provides the most gradual, practical ascent of Nob Hill and connects Route 10 (Pacific Avenue) and Route 210 (Broadway) with Route 25 (Polk Street). From Pacific Avenue and Taylor Street it follows Taylor and California Streets to Polk Street. Warning

signs should be installed at all cable car track crossings. The roadway surface at these crossings is smooth enough to make this a good route.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 325: ELEVENTH STREET (BETWEEN 13TH AND HARRISON STREETS)

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This is a one block connector between Routes 25 (11th Street) and 36 (13th Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 330: SEVENTH AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route connects Route 30 (JFK Drive) and Route 20 (Cabrillo Street) via 7th Avenue. It provides access to Golden Gate Park from the Inner Richmond District. Route 330 is a signed route north of Fulton Street and is a multi-use path south of this point, in Golden Gate Park.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 345: WEBSTER STREET (DUBOCE TO SUTTER)

Network Improvement Project Location(s):

- Webster Street, from Hermann Street to Grove Street

Current Route Description:

Webster Street provides a connection between Route 16 (Sutter Street/Post Street one-way couplet) and Route 30 (Duboce Avenue).

Generalized Opportunities:

- Webster Street, from Hermann Street to Grove Street
 - Consult Planning Dept regarding the former UCSF Extension Campus
 - This segment could be an alternative to the Octavia Boulevard if the design proves to be bicycle unfriendly.

Generalized Constraints:

- Webster Street, from Hermann Street to Grove Street
 - Consult Planning Dept regarding the former UCSF Extension Campus

Improvement Options:

- Webster Street, from Hermann Street to Grove Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework.
 - Improve Bicycle Route Signage
 - Explore striping bike lanes.
 - Explore installing Shared Lane Pavement Markings "Sharrows"

ROUTE 350: DUBOCE AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Westbound Duboce Avenue is westbound Route 30. In the eastbound direction, Route 30 uses 14th Street. The eastbound connection from the "Wiggle" to Market Street is Route 350 via Duboce Avenue.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 365: KEZAR DRIVE MULTI-USE PATH

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

The Kezar Drive Multi-use Path (between JFK Drive and Lincoln Way) provides a very important connection from Market Street and the Haight (via Route 30 (the Panhandle Multi-use Path) or Route 32 (Page Street)) to Route 65 (5th Avenue, Hugo Street and 7th Avenue). Route 65 will provide access to West Portal, SFSU, and via connection with Route 40 (Kirkham Street and Parnassus Avenue) to the Sunset and UC Medical Center.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 395 EL CAMINO DEL MAR

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

As a scenic alternative to Route 95 between the intersection of El Camino del Mar/30th Avenue and the intersection of Clement Street/34th Avenue, cyclists may wish to continue along El Camino del Mar and Route 85 (Legion of Honor Drive). This route traverses Lincoln Park and passes the Palace of the Legion of Honor. From Legion of Honor Drive cyclists can continue to the Great Highway via Clement Street or continue on Route 85 to Golden Gate Park.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 525: TWENTY THIRD STREET/KANSAS STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route was designed to direct cyclists around the Potrero Avenue/Cesar Chavez Street/Bayshore Boulevard/US 101 interchange. It routes them east of US 101, north of Cesar Chavez Street, and avoids this difficult intersection. The route begins at Route 25 (Potrero Avenue) and crosses US 101 via 23rd Street, continuing via Kansas, 26th, and Vermont Streets to Route 60 (Cesar Chavez Street).

Generalized Opportunities:

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

ROUTE 530: 30TH AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

30th Avenue provides access to Route 30 (JFK Drive) in Golden Gate Park from Route 20 (Cabrillo Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 534: MARTIN LUTHER KING JR. DRIVE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This is a one block connector between Routes 34 (Martin Luther King Jr. Drive) and 85 (Sunset Boulevard and 34th Avenue).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 536: THIRD STREET (KING TO TOWNSEND STREETS)

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This is a one block northbound connector between Routes 5 (Third Street, King Street, The Embarcadero) and 36 (Townsend Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 545: MCCOPPIN STREET / VALENCIA STREET

Network Improvement Project Location(s):

- McCoppin Path, from Valencia Street to Market Street

Current Route Description:

McCoppin Street between Market and Valencia Streets provides a connection between eastbound Route 50 (Market Street) and southbound Route 45 (Valencia Street). Valencia Street between McCoppin and Market Streets provides a connection between northbound Route 45 (Valencia Street) and eastbound Route 50 (Market Street).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

- McCoppin Path, from Valencia Street to Market Street
 - Monitor Path once completed and make improvements as necessary.

ROUTE 565: MARTIN LUTHER KING JR. DRIVE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Provides a spur between Route 65 (Bowling Green Drive) and Route 365 (Kesar Drive Multi-use Path) within Golden Gate Park,

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 705: PAUL AVENUE/ MCLAREN PARK/ OCEAN AVENUE

Network Improvement Project Location(s):

- Mansell Street, from San Bruno Avenue to University Street
- Mansell Street, from University Street to Persia Avenue
- Persia Avenue, from Mansell Street to Ocean Avenue

Current Route Description:

Route 705 is an one-way westbound signed route on Paul Avenue between Third Street (Route 5) and Bayshore Boulevard (Route 25). Northbound Route 5 cyclists remain on 3rd Street. However, southbound Route 5 cyclists are detoured from 3rd Street (Route 5) via Route 705 (Paul Avenue) and Route 25 (San Bruno Avenue) back to southbound Route 5 (Bayshore Boulevard) just north of Arleta Avenue.

Generalized Opportunities:

- Mansell Street, from San Bruno Avenue to University Street
 - Bike lanes exist along this portion of Mansell Street

Generalized Constraints:

- Mansell Street, from University Street Persia Avenue
 - Currently not on the Bicycle Route Network
- Persia Avenue, from Mansell Street to Ocean Avenue
 - Currently not on the Bicycle Route Network

Improvement Options:

- Mansell Street, from San Bruno Avenue to University Street
 - Improve the bicycle facilities along this segment
- Mansell Street, from University Street Persia Avenue
 - Study for inclusion in the Bicycle Route Network
- Persia Avenue, from Mansell Street to Ocean Avenue

- o Study for inclusion in the Bicycle Route Network

**ROUTE 730: 43RD AVENUE/CHAIN OF LAKES DRIVE WEST
NETWORK IMPROVEMENT PROJECT LOCATION(S):**

Network Improvement Project Location(s):

- Chain of Lakes Path, from Fulton Street to JFK Drive

Current Route Description:

Beginning at Route 20 (Cabrillo Street), this route follows 43rd Avenue to the multi-use path on former Chain of Lakes Drive West and continues south of JFK Drive (Route 30) to the Golden Gate Park Bicycle Path (Route 830). Northbound, leaving Golden Gate Park, this route briefly jogs onto Chain of Lakes Drive East to avoid the one-way section of Chain of Lakes Drive West that is open to motor vehicles.

Generalized Opportunities:

- Chain of Lakes Path, from Fulton Street to JFK Drive
 - o Consult with Rec and Park Staff and the Golden Gate Park Master Plan

Generalized Constraints:

- Chain of Lakes Path, from Fulton Street to JFK Drive
 - o Consult with Rec and Park Staff and the Golden Gate Park Master Plan

Improvement Options:

- Chain of Lakes Path, from Fulton Street to JFK Drive
 - o This segment was recommended for improvements within the Bicycle Plan: Policy Framework, consult with Rec and Park Staff to proceed with resurfacing, striping, and signage

ROUTE 749: DIAMOND STREET

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This signed route on Diamond Street connects Route 49 (Jersey Street/Diamond Street) with Route 60 (Clipper Street) and provides a connection from Noe Valley to the Twin Peaks area.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 760: 14TH AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route provides a connection between Route 60 (Vicente Street) and Route 50 (Portola Drive).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 765: NORTH-EAST OUTLET PATH, GOLDEN GATE PARK

Network Improvement Project Location(s):

- Horseshoe Court Path, from Fulton Street to Conservatory East Street

Current Route Description:

Route 765 provides access to St. Mary's Hospital, University of San Francisco and Golden Gate Park, and access to Route 65 (West Conservatory Drive) and Route 30 (Panhandle Multi-use Path/JFK Drive).

Generalized Opportunities:

- Horseshoe Court Path, from Fulton Street to Conservatory East Street
 - Golden Gate Park Master Plan
 - Concourse Authority Transportation Improvement Plan (TIP) Please refer:
www.goldengateparkconcourse.org/golden_gate/docs/ImplemPlanMatrix_2003.pdf

Generalized Constraints:

- Horseshoe Court Path, from Fulton Street to Conservatory East Street
 - Golden Gate Park Master Plan

Improvement Options:

- Horseshoe Court Path, from Fulton Street to Conservatory East Street
 - This segment was recommended for improvements within the Bicycle Plan: Policy Framework, consult with Rec and Park Staff to proceed with resurfacing, striping, and signage

ROUTE 770: PHELAN AVENUE

Generalized Opportunities:

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way (Please refer to Route 75)
 - Please refer to Route 75 and the 19th Avenue Summary Sheets in Appendix 9a.

Generalized Constraints:

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way (Please refer to Route 75)
 - Please refer to Route 75 and the 19th Avenue Summary Sheets in Appendix 9a.

Improvement Options:

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way (Please refer to Route 75)
 - Please refer to Route 75 and the 19th Avenue Summary Sheets in Appendix 9a.

ROUTE 785: SUNSET BOULEVARD PATH/OCEAN AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This route provides a connection from eastbound Lake Merced Boulevard (Routes 86 and 885) or the Lake Merced Path to northbound Route 85 (Clearfield Drive/34th Avenue). It crosses Lake Merced Boulevard at the marked and signed crosswalk just west of Sunset Boulevard and follows southbound Route 85, but in the opposite direction.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 805: CANDLESTICK PARK

Network Improvement Project Location(s):

- Bay Trail Alignment

Current Route Description:

This route serves Monster Park and Candlestick Point State Recreation Area, by connecting to Routes 5 (Third Street), 7 (Keith Street), and 905 (Tunnel Road). The route follows Harney Way, Jamestown Avenue Extension, and the southern part of Hunters Point Expressway. Then the route continues along Carroll Avenue, Fitch Street (Arelious Walker Drive), Gilman Avenue, Hunters Point Expressway, Alana Way, and Beatty Avenue.

Network Improvement Project Location(s):

- Phelan Avenue, from Judson Avenue to Ocean Avenue

Current Route Description:

Genessee Street and Phelan Avenue provide a connection between Route 70 (Monterey Boulevard and Hearst Avenue) and Route 84 (Ocean Avenue). These streets provide direct access to City College of San Francisco. The route starts at the Genessee Street/Hearst Avenue intersection and continues via Genessee Street, Judson Avenue, and Phelan Avenue to Ocean Avenue (Route 84).

Generalized Opportunities:

- Phelan Avenue, from Judson Avenue to Ocean Avenue
 - Pedestrian and Traffic Calming Planning efforts have identified bike lanes along Phelan Avenue
 - DPT has obtained grant funds to stripe and sign bike lanes on Phelan Avenue from Judson to Ocean Avenues.
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- Phelan Avenue, from Judson Avenue to Ocean Avenue
 - Coordinate with the Pedestrian and Traffic Calming Programs
 - This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

- Phelan Avenue, from Judson Avenue to Ocean Avenue
 - Stripe Bike Lanes – This is funded by a BAAQMD grant and scheduled for completion before January 2007.

ROUTE 775: SAN FRANCISCO STATE UNIVERSITY

Network Improvement Project Location(s):

- Nineteenth Avenue, from Holloway Avenue to Buckingham Way (Please refer to Route 75)

Current Route Description:

South of Eucalyptus Drive, Route 775 follows 20th Avenue and then directs cyclists to the Stonestown Shopping Center parking lot's access road to the southerly part of Buckingham Way. Please refer to Route 75.

Generalized Opportunities:

- Harney, Jamestown, Hunter's Point Expressway, Fitch, and Carroll are all part of the adopted Bay Trail alignment. The Bay Trail alignment differs from the San Francisco Bicycle Route Network in this area. The Bay Trail heads north on Ingalls and west on Yosemite before rejoining 3rd Street and the San Francisco Bicycle Route Network..

Generalized Constraints:

- Carroll Avenue is an important truck route in the General Plan's Transportation Element.

Improvement Options:

- The Bay Trail Project would like to explore minor discrepancies in alignment and determined the needs of trail users within this area. Realignment of the Bay Trail or the San Francisco Bicycle Route Network should be explored, so these two networks are consistent.

ROUTE 830: MARTIN LUTHER KING JR/ MIDDLE PATH, GOLDEN GATE PARK

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Recreational cyclists who wish to avoid on-street Route 34 (Middle Drive West/Martin Luther King Jr.) and on-street Route 30 (JFK Drive) can use the Route 830 bicycle paths. Route 830 begins at Route 30 across from Lloyd Lake and runs south of Speedway Meadows, the Polo Field, Middle Lake and the Bercut Equitation Field. This path ends at Lincoln Way between 46th and 47th Avenues.

Generalized Opportunities:

- Golden Gate Park Master Plan
 - Concourse Authority Transportation Improvement Plan (TIP)
http://www.goldengateparkconcourse.org/golden_gate/docs/ImplementMatrix_2003.pdf

Generalized Constraints:

- Golden Gate Park Master Plan
 - Concourse Authority Transportation Improvement Plan (TIP)
http://www.goldengateparkconcourse.org/golden_gate/docs/ImplementMatrix_2003.pdf

Improvement Options:

ROUTE 885: LAKE MERCED BOULEVARD/JOHN MUIR DRIVE/SKYLINE BOULEVARD

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Route 885 is an on-street loop route around Lake Merced. It consists of parts of Routes 85, 86, 91, and 95. The 885 designation provides a guide for cyclists who wish to circle the lake.

In the clockwise direction, Route 85 follows Lake Merced Boulevard, John Muir Drive, and Skyline Boulevard back to Lake Merced Boulevard. In the counter-clockwise direction, in order to avoid the narrow lanes of Lake Merced Boulevard and the busy intersection of Sunset and Lake Merced Boulevards, Route 885 deviates from the lake at the north end. It is routed via the streets that are used for both northbound and southbound Route 85: Middlefield Drive, Gellert Drive, Clearfield Drive, Ocean Avenue, and the path just west of Sunset Boulevard back to Lake Merced Boulevard.

Generalized Opportunities:

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Generalized Constraints:

- This bicycle facility is located on a Muni route. Any improvements should be planned and integrated under the MTA approved guidance published in chapter 2 of the 2004 San Francisco Bicycle Plan: Policy Framework.

Improvement Options:

ROUTE 905: TUNNEL ROAD

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

This signed route provides a low traffic volume alternative to Route 5 (Bayshore Boulevard) via Tunnel Road between its intersection with Bayshore Boulevard and the San Mateo County line.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 930: 47TH AVENUE/ DUTCH WINDMILL

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

Cyclists from the Outer Richmond District may access Route 30 (JFK Drive) via Route 930 (47th Avenue). The route begins at Route 20 (Cabrillo Street) and ends in Golden Gate Park at Route 30.

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

ROUTE 990: CITY COLLEGE OVERCROSSING OF OCEAN AVENUE

Network Improvement Project Location(s):

No new network improvements were identified in the 2004 Planning Process

Current Route Description:

The route connects westbound Route 90 (Geneva Avenue) with City College via the non-motor vehicle overcrossing of Ocean Avenue. Note that there is no connection from eastbound Route 90 with City College via this overcrossing, as the eastbound and westbound lanes of Geneva Avenue are at different grades and are separated by a wall. Access to city College from the west is via Phelan Avenue (Route 710).

Generalized Opportunities:

Generalized Constraints:

Improvement Options:

7.0 FOR MORE INFORMATION

For more information on Bicycle Circulation/Safety Category:

Visit the San Francisco Bicycle Program's website
(www.bicycle.sfgov.org) or Contact:

Peter S. Tannen
San Francisco Department of Parking and Traffic
25 Van Ness Avenue, Suite 345
San Francisco, CA 94102
(415) 554-2396
peter.tannen@sfgov.org

Oliver J. Gajda
San Francisco Department of Parking and Traffic
25 Van Ness Avenue, Suite 345
San Francisco, CA 94102
(415) 503-2119
oliver.gajda@sfgov.org

For more information on Prop K or other 5-Year Prioritization Programs:

Visit the Authority's website (www.sfcta.org) and click on "Funding Opportunities" or Contact:

Maria Lombardo, Chief Deputy Director for Programming &
Legislation
Email: maria_lombardo@sfcta.org
Phone: 415.522.4802

or
Melissa Pelkey, Transportation Planner
Email: melissa_pelkey@sfcta.org
Phone: 415.522.4820
San Francisco County Transportation Authority
100 Van Ness Avenue, 25th Floor
San Francisco, CA 94102
Fax: 415.522.4829

8.0 ACKNOWLEDGEMENTS

Preparation of this report was made possible in part by the
San Francisco County Transportation Authority through a grant of
Proposition K Local Transportation Sales Tax funds.



Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Bicycle Plan Environmental Review									
Parking						24,000	1	5	Programatic
Prop K Five Year Plan						345,000	1	5	Programatic
Safety						39,700	1	5	Programatic
Spot Improvements						1,485,500	1	5	Programatic
Maintenance						560,120	1	5	Programatic
						250,000	1	5	Programatic
02nd Street	Market Street	Mission Street	11		Improvements to Existing Network	38,000	1	3	Design and Engineering
02nd Street	Mission Street	Harrison Street	11		Improvements to Existing Network	126,000	1	3	Design and Engineering
02nd Street	Harrison Street	Townsend Street	11		Improvements to Existing Network	132,000	1	3	Design and Engineering
02nd Street	Townsend Street	King Street	11		Improvements to Existing Network	5,000	2	3	Design and Engineering
03rd Street	China Basin Street	Cargo Way	11		Changes to Existing Network	1,000	1	3	Design and Engineering
03rd Street	Cargo Way	Bayshore Boulevard	05		Changes to Existing Network	6,000	4	4	Conceptual Planning
05th Ave Path	Martin Luther King Jr. Dr	Lincoln Way	65		Improvements to Existing Network	16,000	5	5	Design and Engineering
05th Street	Brannan Street	Townsend Street	19		Improvements to Existing Network	58,000	1	3	Design and Engineering
05th Street	Mission Street	Harrison Street	19		Improvements to Existing Network	172,000	1	3	Design and Engineering
05th Street	Market Street	Mission Street	19		Improvements to Existing Network	57,000	1	3	Design and Engineering
05th Street	Harrison Street	Brannan Street	19		Improvements to Existing Network	114,000	1	3	Design and Engineering
07th Avenue	Kirkham Street	Lawton Street	65		Improvements to Existing Network	16,000	3	3	Design and Engineering
11th Street	Market Street	Mission Street	25		Improvements to Existing Network	13,500	3	3	Conceptual Planning
14th Street	Market Street	Dolores Street	30		Improvements to Existing Network	81,000	1	2	Design and Engineering
15th Street	Market Street	Harrison Street	n/a		Recommended study	4,500	5	5	Conceptual Planning
16th Street	Market Street	South Van Ness Avenue	n/a		Recommended study	107,000	3	3	Corridor Planning
16th Street	South Van Ness Avenue	Bryant Street	n/a		Recommended study	48,000	3	3	Corridor Planning
17th Street	Corbett Street	Market Street	40	50		3,000	4	4	Conceptual Planning
17th Street	Market Street	Harrison Street	n/a		Recommended study	40,000	3	3	Corridor Planning
17th Street	Market Street	Potrero Avenue	n/a		Recommended study	40,000	3	3	Corridor Planning
17th Street	Potrero Avenue	Kansas Street	n/a		Recommended study	40,000	3	3	Corridor Planning
18th Street	Diamond	Harrison Street	n/a		Potential inclusion	120,000	3	3	Corridor Planning
19th Avenue	Holloway Avenue	Buckingham Way	75		Improvements to Existing Network	178,000	3	4	Design and Engineering
20st Avenue	Sloat Boulevard	Buckingham Way	76		Improvements to Existing Network	120,000	TBD	TBD	Corridor Planning
20th Avenue	Potrero Street	Lincoln Way	75		Improvements to Existing Network	83,000	5	5	Design and Engineering
22nd Street	Potrero Avenue	Chalantoga Street	44		Improvements to Existing Network	3,000	3	3	Conceptual Planning
23rd Street	Valencia Street	San Bruno	n/a		Improvements to Existing Network	4,500	5	TBD	Conceptual Planning
25th Avenue	Lincoln Way	Kirkham Street	n/a		Potential inclusion	4,500	5	TBD	Conceptual Planning
26th Street	Valencia Street	Hampshire Street	n/a		Recommended study	4,500	5	TBD	Conceptual Planning
29th Street	Dolores Street	Church Street	45		Potential inclusion	3,000	TBD	TBD	Design and Engineering
29th Street	Sanchez Street	Church Street	49		Improvements to Existing Network	3,000	TBD	TBD	Design and Engineering
30th Street	Church Street	Whitney Street	49	49	Improvements to Existing Network	4,500	TBD	TBD	Design and Engineering
30th Street	Dolores Street	Chenery Street	45		Improvements to Existing Network	4,500	TBD	TBD	Design and Engineering
30th Street	Chenery Street	Church Street	49		Improvements to Existing Network	4,500	TBD	TBD	Design and Engineering
30th Street	Whitney Street	Sanchez Street	49		Improvements to Existing Network	4,500	TBD	TBD	Design and Engineering
34th Ave Path	Polo Fields Path	MLK Dr	85		Improvements to Existing Network	37,000	5	5	Design and Engineering
Alamany Boulevard A	Rousseau Street	Rousseau Street	45		Changes to Existing Network	265,000	1	2	Design and Engineering
Alamany Boulevard B	Alamany Street	Couplet "Split" (Justin Dr.)	45		Changes to Existing Network	207,000	2	3	Design and Engineering
Alamany Boulevard C (cost included in Alamany B)	Couplet "Split" (n of Justin)	Pulnam Street			Changes to Existing Network	0	2	4	Design and Engineering
Alamany Boulevard D (cost included in Alamany B)	Pulnam Street	101/280			Changes to Existing Network	0	2	4	Design and Engineering
Alamany Boulevard E (cost included in Alamany B)	Alamany Circle	Alamany Circle			Changes to Existing Network	0	2	4	Design and Engineering
Ashbury Street	Page Street	Panhandle Path	n/a		Changes to Existing Network	3,000	TBD	TBD	Design and Engineering
Basin Street	Turk Street	Sacramento	n/a		Potential inclusion	3,000	5	TBD	Conceptual Planning
Baker Street	Page Street	Panhandle Path	51		Changes to Existing Network	3,000	TBD	TBD	TBD

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Bamevald Avenue	Loomis Street	Jerrold Avenue	25		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Battery East Path	Lincoln Boulevard	Golden Gate Bridge	202		Improvements to Existing Network	81,000	3	3	Design and Engineering
Battery Street	Embarcadero, The	Market Street	n/a		Improvements to Existing Network	4,500	5	TBD	Conceptual Planning
Bay Street	Embarcadero, The	Fillmore Street	n/a		Recommended study	4,500	5	TBD	Conceptual Planning
Bayshore Boulevard 1A	Paul Avenue	Mansell Street	25		Recommended study	39,000	2	3	Design and Engineering
Bayshore Boulevard 1B	Fitzgerald Avenue	Paul Avenue	25		Recommended study	60,000	2	3	Conceptual Planning
Bayshore Boulevard 1C	Silver Avenue	Fitzgerald Avenue	25		Recommended study	112,000	2	3	Conceptual Planning
Bayshore Boulevard 1D	Industrial Street	Silver Avenue	25		Recommended study	91,000	2	3	Design and Engineering
Bayshore Boulevard 1E	US101 Off Ramp	Industrial Street	25		Recommended study	169,000	2	3	Design and Engineering
Bayshore Boulevard 1F	Cesar Chavez Street	US101 Off Ramp	25		Recommended study	32,000	2	3	Design and Engineering
Bayshore Boulevard 2	Hester Avenue	San Mateo County Line	05						
*** DONE W 3RD ST LIGHT RAIL									
Bayshore Boulevard 2	Mansell Street	Hester Avenue	05	5	Recommended study	8,000	2	2	Conceptual Planning
Beach Street	Van Ness Avenue	the Embarcadero	n/a		Recommended study	4,500	5	5	Conceptual Planning
Bosworth SUO'Shaughnessy Blvd	San Jose Avenue	Portland Drive	55		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Bosworth Street	Cayuga Avenue	Alemany Boulevard	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Brannan Street	Embarcadero, The	Division Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Broadway	Powell Street	Larkin Street	10	210	Improvements to Existing Network	61,000	1	2	Design and Engineering
Broderick Street	Francisco Street	Marina Boulevard	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Brotherhood Way	Lake Merced	Arch Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Buckingham Way	19th Avenue	20th Street Avenue	75		Improvements to Existing Network	22,000	3	4	Design and Engineering
Buckingham Way	20th Avenue	21st Street Avenue	75		Improvements to Existing Network	22,000	3	4	Design and Engineering
California Street	Masonic Avenue	Van Ness Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Capp Street	28th Street	15th Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Cargo Way	End	03rd Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Cesar Chavez Street A	Guerrero Street	Sanchez Street	60		Recommended study	1,000	1	1	Conceptual Planning
Cesar Chavez Street B	US101	Guerrero Street	60		Recommended study	1,189,000	2	5	Design and Engineering
Cesar Chavez Street C	Kansas Street (US280)	Mississippi (US280)	60		Improvements to Existing Network	132,000	3	3	Design and Engineering
Chain of Lakes Dr West	Chain of Lakes Dr East	Bercut Equilation Fld	730		Improvements to Existing Network	15,000	4	4	Design and Engineering
Chenery Street	30th Street	Diamond Street	45		Improvements to Existing Network	TBD	3	TBD	TBD
Church Street	29th Street	30th Street	49		Improvements to Existing Network	TBD	TBD	TBD	TBD
Circular Avenue	Monterey Boulevard	Havelock	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Clayton Street	Page Street	Panhandle Path	n/a		Potential Inclusion	TBD	3	TBD	Conceptual Planning
Columbus Avenue	Washington Street	Northpoint Street	11		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Columbus Avenue	Northpoint Street	Beach Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Conservatory Drive East	Arguello Boulevard	John F Kennedy Drive	65		Improvements to Existing Network	23,000	2	2	Design and Engineering
Conservatory Drive West	Arguello Boulevard	John F Kennedy Drive	65		Improvements to Existing Network	7,000	5	5	Design and Engineering
Corbett Avenue	Clayton Street	17th Street	50	40	Improvements to Existing Network	TBD	4	TBD	TBD
Division Street	Townsend Street	11th Street	36		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Dolores Street	29th Street	San Jose Avenue	45		Changes to Existing Network	3,000	4	4	Conceptual Planning
Duboce Avenue	Valencia Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Duboce Park	Noe Street	Waller Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Embarcadero Promenade, The	North Point Street	King Street	05		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Embarcadero, The	Northpoint Street	Taylor Street	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Evans Avenue	03rd Street	Cesar Chavez Street	68		Improvements to Existing Network	79,000	3	4	Design and Engineering
Fell Street	Masonic Avenue	Mason Street	30		Improvements to Existing Network	103,000	1	1	Design and Engineering
Fell Street	Scott Street	Baker Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Fort Mason Tunnel	Aquatic Park	Laguna Street	n/a		Recommended study	4,500	5	5	Conceptual Planning
Francisco Street	Octavia Street	Laguna Street	n/a		Vestigal Bike Lane	4,500	5	5	Conceptual Planning
Front Street	Howard Street	Harrison Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Front Street	Green Street	Jackson Street	n/a		Vestigal Bike Lane	4,500	5	5	Conceptual Planning
Fullon Street	Webster Street	Baker Street	20	45	Improvements to Existing Network	15,600	2	2	Design and Engineering

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Geary Boulevard	Divisadero	25th Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Geneva Avenue	Ocean Avenue	Paris Street	90		Improvements to Existing Network	3,000	3	3	Conceptual Planning
Golden Gate Avenue	Market Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Golden Gate Avenue	Parker Avenue	Masonic Avenue	20		Changes to Existing Network	TBD	TBD	TBD	TBD
Great Highway/The	Balboa Street	Point Lobos Avenue	95		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Greenwich Street	Oclavia Street	Lyon Street	06		Potential Inclusion	3,000	4	4	Conceptual Planning
Greenwich Street	Polk Street	Oclavia Street	n/a		Changes to Existing Network	3,000	5	5	Conceptual Planning
Grove Street	Van Ness Avenue	Polk Street	20		Changes to Existing Network	3,000	4	4	Conceptual Planning
Grove Street	Scott Street	Baker Street	n/a		Vestigial Bike Lane	4,500	5	5	Conceptual Planning
Guerrero Street/San Jose Avenue	29th Street	Cesar Chavez Street	45		Improvements to Existing Network	44,000	1	1	Design and Engineering
Hayes Street	Divisadero Street	Broderick Street	30		Changes to Existing Network	3,000	4	4	Conceptual Planning
Hayes Street	Scott Street	Divisadero Street	30		Changes to Existing Network	3,000	4	4	Conceptual Planning
Hayes Street	Broderick Street	Baker Street	30		Changes to Existing Network	3,000	4	4	Conceptual Planning
Holloway Avenue	19th Avenue	Plymouth Avenue	90		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Horseshoe Court Path	Fulton Street	Conservatory Dr East	765		Improvements to Existing Network	31,000	3	3	Design and Engineering
Illinois Street A	16th Street	Mariposa Street	05		Changes to Existing Network	TBD	1	2	Design and Engineering
Illinois Street B	Manposa Street	18th Street	05		Changes to Existing Network	TBD	1	2	Design and Engineering
Illinois Street C	18th Street	19th Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street D	19th Street	20th Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street E	20th Street	22nd Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street F	21st Street	25nd Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street G	25th Street	Cesar Chavez Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street H	Main Street	Isais Creek Bridge	05		Changes to Existing Network	75,000	1	2	Design and Engineering
Illinois Street I	Isais Creek Bridge	Isais Creek Bridge	05		Changes to Existing Network	991,000	1	3	Design and Engineering
Indiana Street	23rd Street	Cesar Chavez Street	07		Improvements to Existing Network	768,000	3	3	Design and Engineering
Industrial Street	Bayshore Boulevard	Loomis Street	25		Changes to Existing Network	3,000	4	4	Conceptual Planning
Industrial Street	Oakdale Avenue	Loomis Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Jefferson Street	Embarcadero, The	Larkin Street	n/a		Recommended study	4,500	5	5	Conceptual Planning
Jennings Street	Evans Avenue	Cargo Way	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Jerrild Avenue	Baymeild Avenue	Bayshore Boulevard	25		Improvements to Existing Network	TBD	TBD	TBD	TBD
John F. Kennedy Drive	The Great Highway	Transverse Drive	30		Improvements to Existing Network	TBD	1	TBD	Design and Engineering
John F. Kennedy Drive	Transverse Drive	Stanyan Street	30		Changes to Existing Network	279,000	1	2	Design and Engineering
John Muir Drive	Letke Mercet Blvd	Sylvia Drive	91	885	Changes to Existing Network	50,000	2	2	Design and Engineering
Kearny Street	Market Street	Columbus Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Kirkham Street	Lower Great Hwy	The Great Highway	40		Improvements to Existing Network	13,000	5	5	Design and Engineering
Kirkham Street	06th Avenue	The Great Highway	40		Improvements to Existing Network	TBD	TBD	TBD	TBD
Laguna Honda Boulevard	Forest Hills Muni Sta	Woodside Avenue	65		Improvements to Existing Network	123,000	1	1	Preliminary Design and Engineering
Laguna Honda Boulevard	Plaza Street	Forest Hills Muni Sta	65		Improvements to Existing Network	137,000	1	1	Preliminary Design and Engineering
Laguna Honda Boulevard	Portola Drive	Dewey Boulevard	60		Improvements to Existing Network	10,500	2	2	Design and Engineering
Lake Mercet Boulevard	Skyline Boulevard	John Muir Drive	85	0	Improvements to Existing Network	TBD	TBD	TBD	TBD
Lake Mercet Boulevard	Skyline Boulevard	John Muir Drive	85		Improvements to Existing Network	TBD	TBD	TBD	TBD
Lake Mercet Path	Western Portion (N-S)		91			TBD	TBD	TBD	TBD
Lake Mercet Path	Northern Portion (E-W)		885	85/86/91/95	Improvements to Existing Network	TBD	TBD	TBD	TBD
Lake Street	03rd Avenue	Arguello Boulevard	10		Improvements to Existing Network	5,000	1	1	Design and Engineering
Loomis Street	Industrial Street	Baymeild Avenue	25		Changes to Existing Network	3,000	4	4	Conceptual Planning
Lyon Street	Alamany Boulevard	Bosworth Street	45		Improvements to Existing Network	3,000	3	3	Conceptual Planning
Mansell Street	San Bruno Avenue	University Street	705		Improvements to Existing Network	3,000	3	4	Preliminary Design and Engineering
Mansell Street	University Street	Persia Street	n/a		Potential Inclusion	4,500	3	4	Preliminary Design and Engineering
Manna Boulevard	Laguna Street	Lyon Street	02		Recommended study	120,000	4	4	Corridor Planning
Manposa Street	Pennsylvania	Indiana Street	23		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Market Street	8th Street	Van Ness Avenue	50		Improvements to Existing Network	10,000	1	2	Design and Engineering
Market Street (eastbound) A B C	Noe Street	Sanchez Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Market Street (eastbound) A,B,C	Church Street	Dolores Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (eastbound) A,B,C	Castro Street	Noe Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (eastbound) D	Sanchez Street	Church Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (eastbound) D,E	Dolores Street	Guerrero Street	50		Improvements to Existing Network	1,000,000	3	4	Preliminary Design and Engineering
Market Street (westbound)	Noe Street	17th Street			Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) A,B,C	Buchanan Street	Church Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) A,B,C	Market Street	Sanchez Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) D,E	Oakdale Street	Oakdale Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) D,E	Laguna Street	Buchanan Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) F,G	Sanchez Street	Noe Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Masonic Avenue	Page Street	Geary Boulevard	55		Recommended study	302,800	3	4	Corridor Planning
McAllister Street	Market Street	Masonic Avenue	20		Improvements to Existing Network	TBD	TBD	TBD	TBD
McCoppin Bikeway	Baker Street	Polk Street	20		Improvements to Existing Network	TBD	TBD	TBD	TBD
Mendell Street	Market Street	Valencia Street	45		Improvements to Existing Network	TBD	2	TBD	TBD
Mission Street	Palou Street	Oakdale Avenue	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Mission Street Creek Bikeway	Embarcadero, The	14th Street	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Mississippi Street	16th Street	04th Street	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Monterey Boulevard	San Jose Avenue	Mariposa Street	23		Improvements to Existing Network	9,000	2	2	Design and Engineering
Nonoga Street	Junipero Serra	Junipero Serra	70		Improvements to Existing Network	TBD	TBD	TBD	TBD
North Point Street	La Playa Street	19th Avenue	n/a		Potential Inclusion	4,500	2	TBD	Conceptual Planning
Oak Street	Embarcadero, The	Van Ness Avenue	02		Recommended study	TBD	2	TBD	TBD
Oakdale Avenue	Scott Street	Baker Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Oakdale Avenue	Industrial Street	US280/Salby (southeast side)	70	170	Improvements to Existing Network	56,000	1	2	Design and Engineering
Oakdale Avenue	Phelps Street	03rd Street	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Oakdale Avenue	Loomis Street	Barneveld Avenue	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Oakdale Avenue	Bayshore Boulevard	Loomis Street	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Oakdale Avenue	Barneveld Avenue	Industrial Street	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Ocean Avenue	Mission Street	Junipero Serra	84	90	Improvements to Existing Network	TBD	TBD	TBD	Corridor Planning
Ocean Avenue	McChoppin Bikeway	Hayes Green			Potential Inclusion	TBD	TBD	TBD	Corridor Planning
O'Farrell	Polk Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
O'Shaughnessy Path	Portola Drive	Bosworth Street	55		Improvements to Existing Network	456,000	1	3	Design and Engineering
Pacific Avenue	Polk Street	Steiner Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Page Street	Stanyan Street	Market Street	32		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Page Street Path	East of Kezar Dr Path	Stanyan St (@Page)	32		Improvements to Existing Network	40,000	2	3	Design and Engineering
Page/Stanyan	Page & Stanyan Sts	Page & Stanyan Sts	32		Improvements to Existing Network	343,400	2	3	Design and Engineering
Palou Avenue	Newhall Street	Phelps Street	70	07	Changes to Existing Network	TBD	4	TBD	TBD
Palou Avenue	03rd Street	Newhall Street	70	07	Changes to Existing Network	TBD	4	TBD	TBD
Panhandle Path E-W @ Masonic Avenue	East Side of Masonic Avenue Intersection	West Side of Masonic Avenue Intersection			Improvements to Existing Network	TBD	3	4	Design and Engineering
Panhandle Path N-S @ Ashbury St	Oak Street	Panhandle Path(E-W)	55		Improvements to Existing Network	21,000	3	4	Design and Engineering
Panhandle Path N-S @ Baker St	Oak Street	Panhandle Path(E-W)	n/a		Changes to Existing Network	21,000	3	4	Design and Engineering
Panhandle Path N-S @ Clayton St	Oak Street	Panhandle Path(E-W)	55		Improvements to Existing Network	21,000	3	4	Design and Engineering
Parker Avenue	Turk Street	Golden Gate Avenue	20		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Perimeter Path	Avenue of the Palms		n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Persia Street	Mansell Street	Ocean Avenue			Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Phelan Avenue	Judson Avenue	Ocean Avenue	770	70	Improvements to Existing Network	82,000	2	2	Design and Engineering
Phelps Street	Oakdale Avenue	Palou Avenue	07	70	Changes to Existing Network	TBD	3	TBD	TBD
Plymouth Avenue	Ocean Avenue	Holloway Avenue	90		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Point Lobos Avenue	Great Highway, The	48th Avenue	95		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Polk Street A	Hayes Street	Market Street	25		Improvements to Existing Network	6,000	3	3	Preliminary Design and Engineering

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Polk Street B	Lech Walesa	Hayes Street	25		Improvements to Existing Network	3,000	3	3	Preliminary Design and Engineering
Polk Street C	Grove Street	Lech Walesa	25		Improvements to Existing Network	4,000	3	3	Preliminary Design and Engineering
Polk Street D	McAllister Street	Grove Street	25		Improvements to Existing Network	9,000	4	4	Preliminary Design and Engineering
Polo Field Bike Path		34th Avenue Path	85		Improvements to Existing Network	TBD	2	4	Preliminary Design and Engineering
Portola Drive A	Saint Francis Boulevard	Santa Ana Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive B	Santa Ana Avenue	Santa Clara Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive C	Santa Clara Avenue	Walhman Way	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive D	Walhman Way	Sydney/Fowler Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive E	Sydney Way / Fowler Ave	Twin Peaks Boulevard	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive F	Twin Peaks Boulevard	Clippert Street	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive G	Clippert Street	Corbett Avenue	50		Improvements to Existing Network	250,000	4	5	Preliminary Design and Engineering
Post Street	Steiner Street	Market Street	16		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Potrero Avenue	Cesar Chavez Street	17th Street	25			TBD	2	TBD	TBD
Potrero Avenue	17th Street	Division Street	25			TBD	2	TBD	TBD
Potrero Avenue	23rd Street	23rd Street	25			TBD	2	TBD	TBD
Presidio Boulevard	Pacific Avenue	Geary Boulevard	55		Improvements to Existing Network	3,000	5	TBD	TBD
Randolph Street	Ralston Street	Saint Charles Avenue	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Randolph Street	Vernon Street	Ralston Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Randolph Street	Arch Street	Vernon Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Romain Street Overpass	Market Street (eastside)	Market Street C56(westside)	44		Improvements to Existing Network	TBD	5	5	Conceptual Planning
San Jose Avenue	Dolores Street	Chenery Street	45		Changes to Existing Network	TBD	1	TBD	TBD
San Jose Avenue	Randall Street	29th Street	49		Improvements to Existing Network	55,000	1	1	Design and Engineering
Sanchez Street	Day Street	30th Street	49		Improvements to Existing Network	TBD	3	TBD	TBD
Sanchez Street	14th Street	26th Street	n/a		Potential Inclusion	TBD	5	5	Conceptual Planning
Shotwell Street	Alamany Boulevard	Oakdale Avenue	70		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Silver Avenue	19th Avenue	La Playa Street	50		Improvements to Existing Network	TBD	2	3	Design and Engineering
Sloat Boulevard	Great Highway, The	Skyline Blvd.	50		Improvements to Existing Network	58,000	2	3	Design and Engineering
Sloat Boulevard	Fulton Street	Frederick	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Slanyan Street	Broadway	Market Street	17		Improvements to Existing Network	TBD	TBD	TBD	TBD
Stockton Street	Ocean Avenue	Lake Merced Blvd	85		Improvements to Existing Network	19,000	5	5	Design and Engineering
Sunset Path	Market Street	Steiner Street	16		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Sutter Street	China Basin Street	Illinois Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Terry Francois Boulevard	02nd Street	04th Street	36		Improvements to Existing Network	73,600	2	4	Corridor Planning
Townsend Street	Embarcadero, The	Division Street	36		Improvements to Existing Network	205,000	2	4	Corridor Planning
Townsend Street	Steiner Street	02nd Street	36		Improvements to Existing Network	3,000	2	4	Corridor Planning
Union Street	Van Ness Avenue	The Great Highway	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Vicente Path	Lower Great Highway	Columbus Avenue	60		Improvements to Existing Network	13,000	5	5	Design and Engineering
Washington Street	Embarcadero, The	Grove Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Webster Street	Hermann Street+8162	Page Street	345		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Wiggle The	Church Street	Page Street	30		Improvements to Existing Network	32,000	2	3	Design and Engineering
Winston Drive	Junipero Serra Boulevard	Lake Merced Boulevard	86		Improvements to Existing Network	TBD	TBD	TBD	TBD
Woodside Avenue	Portola Drive	Laguna Honda Boulevard	60		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Yosemite Avenue	03rd Street	Baytrail	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
TOTAL						13,180,220			

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Bicycle Plan Environmental Review Parking						24,000	1	5	Programatic
Prop K Five Year Plan						345,000	1	5	Programatic
Safety						39,700	1	5	Programatic
Spot Improvements						1,485,500	1	5	Programatic
Maintenance						560,120	1	5	Programatic
						250,000	1	5	Programatic
Manna Boulevard	Laguna Street	Lyon Street	02		Recommended study	120,000	4	4	Corridor Planning
North Point Street	Embarcadero, The	Van Ness Avenue	02		Recommended study	TBD	2	TBD	TBD
03rd Street	Cargo Way	Bayshore Boulevard	05		Changes to Existing Network	6,000	4	4	Conceptual Planning
Bayshore Boulevard 2									
*** DONE W 3RD ST LIGHT RAIL									
Embarcadero Promenade, The	Hester Avenue	San Mateo County Line	05		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Illinois Street A	North Point Street	King Street	05		Changes to Existing Network	TBD	1	2	Design and Engineering
Illinois Street B	16th Street	Mariposa Street	05		Changes to Existing Network	TBD	1	2	Design and Engineering
Illinois Street C	Mariposa Street	18th Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street D	18th Street	19th Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street E	19th Street	20th Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street F	20th Street	22nd Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street G	22nd Street	25th Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street H	25th Street	Cesar Chavez Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street I	Marin Street	Islais Creek Bridge	05		Changes to Existing Network	75,000	1	2	Design and Engineering
Greenwich Street	Islais Creek Bridge	Islais Creek Bridge	05		Changes to Existing Network	991,000	1	3	Design and Engineering
Indiana Street	Oakdale Street	Lyon Street	06		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Phelps Street	23rd Street	Cesar Chavez Street	07		Improvements to Existing Network	768,000	3	3	Design and Engineering
Broadway	Phelps Street	Palou Avenue	07	70	Changes to Existing Network	TBD	3	TBD	TBD
Lake Street	Oakdale Avenue	Larkin Street	10	210	Improvements to Existing Network	61,000	1	2	Design and Engineering
02nd Street	03rd Avenue	Arguello Boulevard	10		Improvements to Existing Network	5,000	1	1	Design and Engineering
02nd Street	Market Street	Mission Street	11		Improvements to Existing Network	19,000	1	3	Design and Engineering
02nd Street	Mission Street	Harrison Street	11		Improvements to Existing Network	65,000	1	3	Design and Engineering
02nd Street	Harrison Street	Townsend Street	11		Improvements to Existing Network	68,000	1	3	Design and Engineering
03rd Street	Townsend Street	King Street	11		Improvements to Existing Network	5,000	2	3	Design and Engineering
Columbus Avenue	China Basin Street	Cargo Way	11		Changes to Existing Network	1,000	1	3	Design and Engineering
Post Street	Washington Street	Northpoint Street	11		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Sutter Street	Sterner Street	Market Street	16		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Stockton Street	Market Street	Steiner Street	16		Improvements to Existing Network	3,000	4	4	Conceptual Planning
05th Street	Broadway	Market Street	17		Improvements to Existing Network	TBD	TBD	TBD	TBD
05th Street	Brannan Street	Townsend Street	19		Improvements to Existing Network	135,000	1	3	Design and Engineering
05th Street	Mission Street	Harrison Street	19		Improvements to Existing Network	405,000	1	3	Design and Engineering
05th Street	Market Street	Brannan Street	19		Improvements to Existing Network	139,000	1	3	Design and Engineering
Fulton Street	Harrison Street	Webster Street	19		Improvements to Existing Network	270,000	1	3	Design and Engineering
Golden Gate Avenue	Parker Avenue	Masonic Avenue	20	45	Improvements to Existing Network	15,600	2	2	Design and Engineering
Grove Street	Van Ness Avenue	Polk Street	20		Changes to Existing Network	TBD	TBD	TBD	TBD
McAllister Street	Market Street	Masonic Avenue	20		Improvements to Existing Network	3,000	4	4	Conceptual Planning
McAllister Street	Baker Street	Polk Street	20		Improvements to Existing Network	TBD	TBD	TBD	TBD
Parker Avenue	Turk Street	Golden Gate Avenue	20		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Mariposa Street	Pennsylvania	Indiana Street	23		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Mississippi Street	16th Street	Mariposa Street	23		Improvements to Existing Network	9,000	2	2	Design and Engineering
11th Street	Market Street	Mission Street	25		Improvements to Existing Network	13,500	3	3	Conceptual Planning
Barneveld Avenue	Loomis Street	Jerrold Avenue	25		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Bayshore Boulevard 1A	Paul Avenue	Mansell Street	25		Recommended study	72,000	2	3	Design and Engineering

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Bayshore Boulevard 1B	Fitzgerald Avenue	Paul Avenue	25		Recommended study	109,000	2	3	Conceptual Planning
Bayshore Boulevard 1C	Silver Avenue	Fitzgerald Avenue	25		Recommended study	207,000	2	3	Conceptual Planning
Bayshore Boulevard 1D	Industrial Street	Silver Avenue	25		Recommended study	165,000	2	3	Design and Engineering
Bayshore Boulevard 1E	US101 Off Ramp	Industrial Street	25		Recommended study	307,000	2	3	Design and Engineering
Bayshore Boulevard 1F	Cesar Chavez Street	US101 Off Ramp	25		Recommended study	57,000	2	3	Design and Engineering
Bayshore Boulevard 2	Mansell Street	Hester Avenue	25	5	Recommended study	19,000	2	2	Conceptual Planning
Industrial Street	Bayshore Boulevard	Loomis Street	25			3,000	4	4	Conceptual Planning
Jerrold Avenue	Barneveld Avenue	Bayshore Boulevard	25		Changes to Existing Network	TBD	TBD	TBD	TBD
Loomis Street	Industrial Street	Barneveld Avenue	25		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Polk Street A	Hayes Street	Market Street	25		Improvements to Existing Network	2,000	3	3	Preliminary Design and Engineering
Polk Street B	Lech Walesa	Hayes Street	25		Improvements to Existing Network	1,000	3	3	Preliminary Design and Engineering
Polk Street C	Grove Street	Lech Walesa	25		Improvements to Existing Network	1,000	3	3	Preliminary Design and Engineering
Polk Street D	McAllister Street	Grove Street	25		Improvements to Existing Network	9,000	4	4	Preliminary Design and Engineering
Potrero Avenue	Cesar Chavez Street	17th Street	25			TBD	2	TBD	TBD
Potrero Avenue	17th Street	Division Street	25			TBD	2	TBD	TBD
Potrero Avenue	23rd Street	23rd Street	25			TBD	2	TBD	TBD
14th Street	Market Street	Dolores Street	30		Improvements to Existing Network	81,000	1	2	Design and Engineering
Fell Street	Masonic Avenue	Masonic Avenue	30		Improvements to Existing Network	103,000	1	1	Design and Engineering
Hayes Street	Divisadero Street	Broderick Street	30		Changes to Existing Network	3,000	4	4	Conceptual Planning
Hayes Street	Scott Street	Divisadero Street	30		Changes to Existing Network	3,000	4	4	Conceptual Planning
Hayes Street	Broderick Street	Baker Street	30		Changes to Existing Network	3,000	4	4	Conceptual Planning
John F Kennedy Drive	The Great Highway	Transverse Drive	30		Improvements to Existing Network	TBD	1	TBD	Design and Engineering
John F Kennedy Drive	Transverse Drive	Slanyan Street	30		Improvements to Existing Network	279,000	1	2	Design and Engineering
Wiggle The	Church Street	Page Street	30		Improvements to Existing Network	32,000	2	3	Design and Engineering
Page Street	Slanyan Street	Market Street	32		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Page Street Path	East of Kezar Dr Path	Slanyan St. (@Page)	32		Improvements to Existing Network	40,000	2	3	Design and Engineering
Page/Slanyan	Page & Slanyan Sts	Page & Slanyan Sts	32		Improvements to Existing Network	343,400	2	3	Design and Engineering
Divison Street	Townsend Street	11th Street	36		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Townsend Street	04th Street	04th Street	36		Improvements to Existing Network	73,600	2	4	Corridor Planning
Townsend Street	04th Street	Division Street	36		Improvements to Existing Network	205,000	2	4	Corridor Planning
Townsend Street	Embarcadero, The	02nd Street	36		Improvements to Existing Network	3,000	2	4	Corridor Planning
17th Street	Corbett Street	Market Street	40	50	Improvements to Existing Network	3,000	4	4	Conceptual Planning
Kirkham Street	Lower Great Hwy	The Great Highway	40		Improvements to Existing Network	13,000	5	5	Design and Engineering
Kirkham Street	06th Avenue	The Great Highway	40		Improvements to Existing Network	TBD	TBD	TBD	TBD
22nd Street	Potrero Avenue	Chalanogga Street	44		Improvements to Existing Network	3,000	3	3	Conceptual Planning
Roman Street Overpass	Market Street (eastside)	Market Street C56(westside)	44		Improvements to Existing Network	TBD	5	5	Conceptual Planning
28th Street	Dolores Street	Church Street	45		Potential Inclusion	3,000	TBD	TBD	Design and Engineering
30th Street	Dolores Street	Chenery Street	45	49	Improvements to Existing Network	4,500	TBD	TBD	Design and Engineering
Alemany Boulevard A	Alemany Avenue	Rousseau Street	45		Changes to Existing Network	265,000	1	2	Design and Engineering
Alemany Boulevard B	Rousseau Street	Couplet "Split" (Justin Dr.)	45		Changes to Existing Network	207,000	2	3	Design and Engineering
Chenery Street	30th Street	Diamond Street	45		Improvements to Existing Network	TBD	3	TBD	TBD
Dolores Street	29th Street	San Jose Avenue	45		Changes to Existing Network	3,000	4	4	Conceptual Planning
Guerrero Street/San Jose Avenue	29th Street	Cesar Chavez Street	45		Improvements to Existing Network	44,000	1	1	Design and Engineering
Lylel Street	Alemany Boulevard	Bosworth Street	45		Improvements to Existing Network	3,000	3	3	Conceptual Planning
McCoy Street	Market Street	Valencia Street	45		Changes to Existing Network	TBD	2	TBD	TBD
San Jose Avenue	Dolores Street	Chenery Street	45		Improvements to Existing Network	TBD	1	TBD	TBD
29th Street	Sanchez Street	Church Street	49		Improvements to Existing Network	3,000	TBD	TBD	Design and Engineering
30th Street	Church Street	Whitney Street	49		Improvements to Existing Network	4,500	2	TBD	Design and Engineering
30th Street	Chenery Street	Church Street	49		Improvements to Existing Network	4,500	TBD	TBD	Design and Engineering
30th Street	Whitney Street	Sanchez Street	49		Improvements to Existing Network	4,500	TBD	TBD	Design and Engineering
Church Street	29th Street	30th Street	49		Improvements to Existing Network	TBD	TBD	TBD	TBD
Sanchez Street	Day Street	30th Street	49		Improvements to Existing Network	TBD	3	TBD	TBD

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Sanchez Street	29th Street	Day Street	49		Improvements to Existing Network	TBD	TBD	TBD	TBD
Corbett Avenue	Clayton Street	17th Street	50	40	Improvements to Existing Network	TBD	4	TBD	TBD
Market Street	8th Street	Van Ness Avenue	50		Improvements to Existing Network	10,000	1	2	Design and Engineering
Market Street (eastbound) A,B,C	Noe Street	Sanchez Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (eastbound) A,B,C	Church Street	Dolores Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (eastbound) A,B,C	Castro Street	Noe Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (eastbound) D	Sanchez Street	Church Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (eastbound) D,E	Dolores Street	Guerrero Street	50		Improvements to Existing Network	1,000,000	3	4	Preliminary Design and Engineering
Market Street (westbound) A,B,C	Buchanan Street	Church Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) A,B,C	Church Street	Sanchez Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) D,E	Oclavia Street	Laguna Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) D,E	Laguna Street	Buchanan Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Market Street (westbound) F,G	Sanchez Street	Noe Street	50		Improvements to Existing Network	TBD	3	4	Preliminary Design and Engineering
Portola Drive A	Saint Francis Boulevard	Santa Ana Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive B	Santa Ana Avenue	Santa Clara Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive C	Walthman Way	Walthman Way	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive D	Walthman Way	Sydney/Fowler Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive E	Sydney Way / Fowler Avenue	Twin Peaks Boulevard	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive F	Twin Peaks Boulevard	Clipper Street	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive G	Clipper Street	Corbett Avenue	50		Improvements to Existing Network	250,000	4	5	Preliminary Design and Engineering
Sloat Boulevard	19th Avenue	La Playa Street	50		Improvements to Existing Network	TBD	2	3	Design and Engineering
Sloat Boulevard	Great Highway, The	Skyline Blvd	50		Improvements to Existing Network	58,000	2	3	Design and Engineering
Baker Street	Page Street	Panhandle Path	51		Changes to Existing Network	3,000	TBD	TBD	Conceptual Planning
Bosworth S/O'Shaughnessy Blvd	San Jose Avenue	Portola Drive	55		Improvements to Existing Network	302,800	3	4	Corridor Planning
Masonic Avenue	Page Street	Geary Boulevard	55		Recommended study	456,000	1	3	Design and Engineering
O'Shaughnessy Path	Portola Drive	Bosworth Street	55		Improvements to Existing Network	21,000	3	4	Design and Engineering
Panhandle Path N-S @ Ashbury St	Oak Street	Panhandle Path(E-W)	55		Improvements to Existing Network	21,000	3	4	Design and Engineering
Panhandle Path N-S @ Clayton St	Oak Street	Panhandle Path(E-W)	55		Improvements to Existing Network	3,000	5	TBD	TBD
Presidio Boulevard	Pacific Avenue	Geary Boulevard	55		Improvements to Existing Network	1,000	1	1	Conceptual Planning
Cesar Chavez Street A	Guerrero Street	Sanchez Street	60		Recommended study	1,189,000	2	5	Design and Engineering
Cesar Chavez Street B	US101	Guerrero Street	60		Recommended study	132,000	3	3	Design and Engineering
Cesar Chavez Street C	Kansas Street (US101)	Mississippi (US280)	60		Improvements to Existing Network	10,500	2	2	Design and Engineering
Laguna Honda Boulevard	Portola Drive	Dewey Boulevard	60		Improvements to Existing Network	13,000	5	5	Design and Engineering
Vicente Path	Lower Great Highway	The Great Highway	60		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Woodside Avenue	Portola Drive	Laguna Honda Boulevard	60		Improvements to Existing Network	16,000	5	5	Design and Engineering
65th Ave Path	Portola Drive	Lincoln Way	65		Improvements to Existing Network	16,000	3	3	Design and Engineering
07th Avenue	Kirkham Street	Lawton Street	65		Improvements to Existing Network	23,000	2	2	Design and Engineering
Conservatory Drive East	Arguello Boulevard	John F Kennedy Drive	65		Improvements to Existing Network	7,000	5	5	Design and Engineering
Conservatory Drive West	Arguello Boulevard	John F Kennedy Drive	65		Improvements to Existing Network	85,000	1	1	Preliminary Design and Engineering
Laguna Honda Boulevard	Forest Hills Muni Sta	Woodside Avenue	65		Improvements to Existing Network	95,000	1	1	Preliminary Design and Engineering
Laguna Honda Boulevard	Plaza Street	Forest Hills Muni Sta	65		Improvements to Existing Network	79,000	3	4	Design and Engineering
Evans Avenue	03rd Street	Cesar Chavez Street	68		Improvements to Existing Network	TBD	TBD	TBD	TBD
Monterey Boulevard	San Jose Avenue	Junipero Serra	70		Improvements to Existing Network	56,000	1	2	Design and Engineering
Oakdale Avenue	Industrial Street	US280/Sabry (southeast side)	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Oakdale Avenue	Phelps Street	03rd Street	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Oakdale Avenue	Loomis Street	Barneveld Avenue	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Oakdale Avenue	Bayshore Boulevard	Loomis Street	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Oakdale Avenue	Barneveld Avenue	Industrial Street	70	170	Improvements to Existing Network	TBD	2	3	Design and Engineering
Palou Avenue	Newhall Street	Phelps Street	70	07	Changes to Existing Network	TBD	4	TBD	TBD
Palou Avenue	03rd Street	Newhall Street	70	07	Changes to Existing Network	TBD	4	TBD	TBD
Silver Avenue	Alemany Boulevard	Oakdale Avenue	70		Improvements to Existing Network	3,000	4	4	Conceptual Planning

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19th Avenue	Holloway Avenue	Buckingham Way	75		Improvements to Existing Network	178,000	3	4	Design and Engineering
20th Avenue	Wawona Street	Lincoln Way	75		Improvements to Existing Network	83,000	5	5	Design and Engineering
Buckingham Way	19th Avenue	20th Street Avenue	75		Improvements to Existing Network	22,000	3	4	Design and Engineering
Buckingham Way	20th Avenue	21st Street Avenue	75		Improvements to Existing Network	22,000	3	4	Design and Engineering
20th Avenue	Sloat Boulevard	Buckingham Way	76		Improvements to Existing Network	120,000	TBD	TBD	Corridor Planning
Ocean Avenue	Mission Street	Junipero Serra	84	90	Improvements to Existing Network	TBD	TBD	TBD	Corridor Planning
34th Ave Path	Polo Fields Path	MLK Dr	85		Improvements to Existing Network	37,000	5	5	Design and Engineering
Lake Merced Boulevard	Skyline Boulevard	John Muir Drive	85	0	Improvements to Existing Network	TBD	TBD	TBD	TBD
Lake Merced Boulevard	Skyline Boulevard	John Muir Drive	85		Improvements to Existing Network	TBD	TBD	TBD	TBD
Polo Field Bike Path	Polo Field	34th Avenue Path	85		Improvements to Existing Network	TBD	2	4	Preliminary Design and Engineering
Sunset Path	Ocean Avenue	Lake Merced Blvd	85		Improvements to Existing Network	19,000	5	5	Design and Engineering
Winston Drive	Junipero Serra Boulevard	Lake Merced Boulevard	86		Improvements to Existing Network	TBD	TBD	TBD	TBD
Geneva Avenue	Ocean Avenue	Paris Street	90		Improvements to Existing Network	3,000	3	3	Conceptual Planning
Holloway Avenue	19th Avenue	Plymouth Avenue	90		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Plymouth Avenue	Ocean Avenue	Holloway Avenue	90		Improvements to Existing Network	3,000	4	4	Conceptual Planning
John Muir Drive	Lake Merced Blvd	Syline Drive	91	885	Changes to Existing Network	50,000	2	2	Design and Engineering
Lake Merced Path	Western Portion (N-S)		91			TBD	TBD	TBD	TBD
Great Highway, The	Balboa Street	Point Lobos Avenue	95		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Point Lobos Avenue	Great Highway, The	48th Avenue	95		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Battery East Path	Lincoln Boulevard	Golden Gate Bridge	202		Improvements to Existing Network	81,000	3	3	Design and Engineering
Webster Street	Hermann Street+B182	Grove Street	345		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Mansell Street	San Bruno Avenue	University Street	705		Improvements to Existing Network	3,000	3	4	Preliminary Design and Engineering
Chain of Lakes Dr West	San Bruno Avenue	Bercut Equilation Fld	730		Improvements to Existing Network	15,000	4	4	Design and Engineering
Horsehoe Court Path	Fullon Street	Conservatory Dr East	765		Improvements to Existing Network	31,000	3	3	Design and Engineering
Phelan Avenue	Judson Avenue	Ocean Avenue	770	70	Improvements to Existing Network	82,000	2	2	Design and Engineering
Lake Merced Path	Northern Portion (E-W)	Eastern Portion (N-S)	885	85/86/91/95	Improvements to Existing Network	TBD	TBD	TBD	TBD
15th Street	Market Street	Harrison Street	n/a		Recommended study	4,500	5	5	Conceptual Planning
16th Street	Market Street	South Van Ness Ave	n/a		Recommended study	706,000	3	3	Corridor Planning
16th Street	Market Street	Bryant Street	n/a		Recommended study	316,000	3	3	Corridor Planning
17th Street	Market Street	Harrison Street	n/a		Recommended study	40,000	3	3	Corridor Planning
17th Street	Harrison Street	Potrero Avenue	n/a		Recommended study	40,000	3	3	Corridor Planning
17th Street	Potrero Avenue	Potrero Avenue	n/a		Recommended study	40,000	3	3	Corridor Planning
18th Street	Diamond	Harrison Street	n/a		Potential Inclusion	120,000	3	3	Corridor Planning
23rd Street	Valencia Street	San Bruno	n/a		Improvements to Existing Network	4,500	5	TBD	Conceptual Planning
25th Avenue	Lincoln Way	Kirkham Street	n/a		Potential Inclusion	4,500	5	TBD	Conceptual Planning
26th Street	Valencia Street	Hampshire Street	n/a		Recommended study	4,500	5	TBD	Conceptual Planning
Baker Street	Turk Street	Sacramento	n/a		Potential Inclusion	3,000	5	TBD	Conceptual Planning
Battery Street	Embarcadero, The	Market Street	n/a		Improvements to Existing Network	4,500	5	TBD	Conceptual Planning
Bay Street	Embarcadero, The	Fillmore Street	n/a		Recommended study	4,500	5	TBD	Conceptual Planning
Beach Street	Van Ness Avenue	the Embarcadero	n/a		Recommended study	4,500	5	5	Conceptual Planning
Boisworth Street	Cayuga Avenue	Alamyany Boulevard	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Brannan Street	Embarcadero, The	Division Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Brooklyn Street	Francisco Street	Marina Boulevard	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Bronxwood Way	Lake Merced	Arch Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
California Street	Masonic Avenue	Van Ness Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Capp Street	26th Street	15th Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Cargo Way	End	03rd Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Circular Avenue	Monterey Boulevard	Havelock	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Columbus Avenue	Northport Street	Beach Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Duboce Avenue	Valencia Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Duboce Park	Noe Street	Waller Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning

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Embarcadero, The	Northpoint Street	Taylor Street	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Fell Street	Scott Street	Baker Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Fort Mason Tunnel	Aquala Park	Laguna Street	n/a		Recommended study	4,500	5	5	Conceptual Planning
Francisco Street	Ocavla Street	Laguna Street	n/a		Vestigial Bike Lane	4,500	5	5	Conceptual Planning
Fremont Street	Howard Street	Harrison Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Front Street	Green Street	Jackson Street	n/a		Vestigial Bike Lane	4,500	5	5	Conceptual Planning
Geary Boulevard	Divisadero	25th Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Golden Gate Avenue	Baker Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Greenwich Street	Polk Street	Octavia Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Grove Street	Scott Street	Baker Street	n/a		Vestigial Bike Lane	4,500	5	5	Conceptual Planning
Industrial Street	Oakdale Avenue	Loomis Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Jefferson Street	Embarcadero, The	Larkin Street	n/a		Recommended study	4,500	5	5	Conceptual Planning
Jennings Street	Evans Avenue	Gargo Way	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Kearny Street	Market Street	Columbus Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Mansell Street	University Street	Persia Street	n/a		Potential Inclusion	4,500	3	4	Preliminary Design and Engineering
Mendell Street	Palou Street	Oakdale Avenue	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Mission Street	Embarcadero, The	14th Street	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Mission Street Creek Bikeway	16th Street	14th Street	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Nonoga Street	La Playa Street	19th Avenue	n/a		Potential Inclusion	4,500	2	TBD	Conceptual Planning
Oak Street	Scott Street	Baker Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
O'Farrell	Polk Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Pacific Avenue	Polk Street	Steiner Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Panhandle Path N-S @ Baker St	Oak Street	Panhandle Path(E-W)	n/a		Changes to Existing Network	21,000	3	4	Design and Engineering
Perimeter Path	Avenue of the Palms		n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Randolph Street	Ralston Street	Saint Charles Avenue	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Randolph Street	Vernon Street	Ralston Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Randolph Street	Arch Street	Vernon Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Shotwell Street	14th Street	26th Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Stanyan Street	Fulton Street	Frederick	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Terry Francois Boulevard	China Basin Street	Illinois Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Union Street	Steiner Street	Van Ness Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Washington Street	Embarcadero, The	Columbus Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Yosemite Avenue	Q3rd Street	Baytrail	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Alemany Boulevard C (cost included in Alemany B)	Couplet "Split" (n of Justin)	Punam Street			Changes to Existing Network	0	2	4	Design and Engineering
Alemany Boulevard D (cost included in Alemany B)	Punam Street	101/280			Changes to Existing Network	0	2	4	Design and Engineering
Alemany Boulevard E (cost included in Alemany B)	Alemany Circle	Alemany Circle			Changes to Existing Network	0	2	4	Design and Engineering
Asbury Street	Page Street	Panhandle Path			Changes to Existing Network	3,000	TBD	TBD	Design and Engineering
Clayton Street	Page Street	Panhandle Path				TBD	3	TBD	TBD
Market Street [westbound]	Noe Street	17th Street			Potential Inclusion	TBD	3	4	Preliminary Design and Engineering
Octavia Boulevard	McChoppin Bikeway	Haves Green				TBD	TBD	TBD	Corridor Planning
Panhandle Path E-W @ Masonic Avenue	East Side of Masonic Avenue Intersection	West Side of Masonic Avenue Intersection				TBD	3	4	Design and Engineering
Persia Street	Mansell Street	Ocean Avenue				TBD	3	4	Preliminary Design and Engineering
San Jose Avenue	Randall Street	29th Street				55,000	1	1	Design and Engineering

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Bicycle Plan Environmental Review									
Parkin						24,000	1	5	Prognatic
Prop K Five Year Plan						345,000	1	5	Prognatic
Safety						39,700	1	5	Prognatic
Spot Improvements						1,485,500	1	5	Prognatic
Maintenance						580,120	1	5	Prognatic
						250,000	1	5	Prognatic
02nd Street	Market Street	Mission Street	11		Improvements to Existing Network	19,000	1	3	Design and Engineering
02nd Street	Mission Street	Harrison Street	11		Improvements to Existing Network	67,000	1	3	Design and Engineering
02nd Street	Harrison Street	Townsend Street	11		Improvements to Existing Network	70,000	1	3	Design and Engineering
03rd Street	China Basin Street	Cargo Way	11		Changes to Existing Network	1,000	1	3	Design and Engineering
05th Street	Brannan Street	Townsend Street	19		Improvements to Existing Network	20,000	1	3	Design and Engineering
05th Street	Mission Street	Harrison Street	19		Improvements to Existing Network	60,000	1	3	Design and Engineering
05th Street	Market Street	Mission Street	19		Improvements to Existing Network	19,000	1	3	Design and Engineering
05th Street	Harrison Street	Brannan Street	19		Improvements to Existing Network	40,000	1	3	Design and Engineering
14th Street	Market Street	Dolores Street	30		Improvements to Existing Network	81,000	1	2	Design and Engineering
Alamany Boulevard A	San Jose Avenue	Russell Street	45		Changes to Existing Network	265,000	1	2	Design and Engineering
Broadway	Powell Street	Larkin Street	10	210	Improvements to Existing Network	61,000	1	2	Design and Engineering
Cesar Chavez Street A	Guerrero Street	Sanchez Street	60		Recommended study	1,000	1	1	Design and Engineering
Fell Street	Masonic Avenue	Masonic Avenue	30		Improvements to Existing Network	103,000	1	1	Conceptual Planning
Guerrero Street/San Jose Avenue	29th Street	Cesar Chavez Street	45		Improvements to Existing Network	44,000	1	1	Design and Engineering
Illinois Street A	16th Street	Mariposa Street	05		Changes to Existing Network	TBD	1	2	Conceptual Planning
Illinois Street B	Mariposa Street	18th Street	05		Changes to Existing Network	TBD	1	2	Conceptual Planning
Illinois Street H	Marin Street	Islands Creek Bridge	05		Changes to Existing Network	75,000	1	2	Corridor Planning
Illinois Street I	Islands Creek Bridge	Islands Creek Bridge	05		Changes to Existing Network	991,000	1	3	Conceptual Planning
John F Kennedy Drive	The Great Highway	Transverse Drive	30		Improvements to Existing Network	TBD	1	TBD	Corridor Planning
John F Kennedy Drive	Transverse Drive	Slanyan Street	30		Improvements to Existing Network	279,000	1	2	Corridor Planning
Laguna Honda Boulevard	Forest Hills Muni Sta	Woodside Avenue	65		Improvements to Existing Network	62,000	1	1	Corridor Planning
Laguna Honda Boulevard	Plaza Street	Forest Hills Muni Sta	65		Improvements to Existing Network	68,000	1	1	Corridor Planning
Lake Street	03rd Avenue	Arguello Boulevard	10		Improvements to Existing Network	5,000	1	1	Design and Engineering
Market Street	8th Street	Van Ness Avenue	50		Improvements to Existing Network	10,000	1	2	Corridor Planning
Oakdale Avenue	Industrial Street	US280/Selby (southeast side)	70	170	Improvements to Existing Network	56,000	1	2	Design and Engineering
O'Shaughnessy Path	Portola Drive	Bosworth Street	55		Improvements to Existing Network	456,000	1	3	Conceptual Planning
San Jose Avenue	Dolores Street	Chenery Street	45		Changes to Existing Network	TBD	1	TBD	Conceptual Planning
San Jose Avenue	Randall Street	29th Street			Improvements to Existing Network	55,000	1	1	Conceptual Planning
02nd Street	Townsend Street	King Street	11		Improvements to Existing Network	5,000	2	3	Conceptual Planning
30th Street	Church Street	Whitney Street	49		Improvements to Existing Network	4,500	2	TBD	Design and Engineering
Alamany Boulevard B	Russell Street	Couplet "Split" (Justin Dr.)	45		Changes to Existing Network	207,000	2	3	Design and Engineering
Alamany Boulevard C (cost included in Alamany B)	Couplet "Split" (Justin Dr.)	Punam Street			Changes to Existing Network	0	2	4	Design and Engineering
Alamany Boulevard D (cost included in Alamany B)	Couplet "Split" (Justin Dr.)	101280			Changes to Existing Network	0	2	4	Design and Engineering
Alamany Boulevard E (cost included in Alamany B)	Alamany Circle	Alamany Circle			Changes to Existing Network	0	2	4	Design and Engineering
Bayshore Boulevard 1A	Paul Avenue	Mansell Street	25		Recommended study	34,000	2	3	Design and Engineering
Bayshore Boulevard 1B	Fitzgerald Avenue	Paul Avenue	25		Recommended study	51,000	2	3	Design and Engineering
Bayshore Boulevard 1C	Silver Avenue	Fitzgerald Avenue	25		Recommended study	95,000	2	3	Design and Engineering
Bayshore Boulevard 1D	Industrial Street	Silver Avenue	25		Recommended study	77,000	2	3	Design and Engineering
Bayshore Boulevard 1E	US101 Off Ramp	Industrial Street	25		Recommended study	143,000	2	3	Design and Engineering
Bayshore Boulevard 1F	Cesar Chavez Street	US101 Off Ramp	25		Recommended study	28,000	2	3	Design and Engineering
Bayshore Boulevard 2	Mansell Street	Hester Avenue	25	5	Recommended study	7,000	2	2	Design and Engineering
Cesar Chavez Street B	US101	Guerrero Street	60		Recommended study	1,189,000	2	5	Design and Engineering
Conservatory Drive East	Arguello Boulevard	John F Kennedy Drive	65		Improvements to Existing Network	23,000	2	2	Conceptual Planning
Pulmon Street	Webster Street	Baker Street	20	45	Improvements to Existing Network	15,600	2	2	TBD

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Illinois Street C	18th Street	19th Street	05		Changes to Existing Network	TBD	2	2	Conceptual Planning
Illinois Street D	19th Street	20th Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
Illinois Street E	20th Street	22nd Street	05		Changes to Existing Network	TBD	2	2	Conceptual Planning
Illinois Street F	22nd Street	25th Street	05		Changes to Existing Network	TBD	2	2	Conceptual Planning
Illinois Street G	25th Street	Cesar Chavez Street	05		Changes to Existing Network	TBD	2	2	Design and Engineering
John Muir Drive	Lake Merced Blvd	Syline Drive	91	885	Changes to Existing Network	50,000	2	2	Conceptual Planning
Laguna Honda Boulevard	Portola Drive	Dewey Boulevard	60		Improvements to Existing Network	10,500	2	2	Conceptual Planning
McCoppin Bikeway	Market Street	Valencia Street	45		Improvements to Existing Network	TBD	2	TBD	Design and Engineering
Mississippi Street	16th Street	Mariposa Street	23		Improvements to Existing Network	9,000	2	2	Design and Engineering
Noriega Street	La Playa Street	19th Avenue	n/a		Potential Inclusion	4,500	2	TBD	Design and Engineering
North Point Street	Embarcadero, The	Van Ness Avenue	02		Recommended study	TBD	2	TBD	
Oakdale Avenue	Phelps Street	03rd Street	70	170	Improvements to Existing Network	TBD	2	3	Conceptual Planning
Oakdale Avenue	Loomis Street	Barnevald Avenue	70	170	Improvements to Existing Network	TBD	2	3	Conceptual Planning
Oakdale Avenue	Bayshore Boulevard	Loomis Street	70	170	Improvements to Existing Network	TBD	2	3	Conceptual Planning
Oakdale Avenue	Barnevald Avenue	Industrial Street	70	170	Improvements to Existing Network	TBD	2	3	Conceptual Planning
Oakdale Avenue	Hayes Green	Hayes Green	32		Improvements to Existing Network	40,000	2	TBD	Conceptual Planning
Oakdale Avenue	McChoppin Bikeway	Stanyan St (@Page)	32		Improvements to Existing Network	343,400	2	3	Design and Engineering
Page Street Path	East of Kezar Dr Path	Page & Stanyan Sts	32		Improvements to Existing Network	82,000	2	2	Conceptual Planning
Phelan Avenue	Page & Stanyan Sts	Ocean Avenue	770	70	Improvements to Existing Network	TBD	2	4	Design and Engineering
Polo Field Bike Path	Judson Avenue	34th Avenue Path	85		Improvements to Existing Network	TBD	2	TBD	Design and Engineering
Potrero Avenue	Polo Field	17th Street	25		Improvements to Existing Network	TBD	2	TBD	Conceptual Planning
Potrero Avenue	Cesar Chavez Street	Division Street	25		Improvements to Existing Network	TBD	2	TBD	Conceptual Planning
Potrero Avenue	23rd Street	23rd Street	25		Improvements to Existing Network	TBD	2	TBD	Conceptual Planning
Sloat Boulevard	19th Avenue	La Playa Street	50		Improvements to Existing Network	58,000	2	3	Conceptual Planning
Sloat Boulevard	Great Highway, The	Skyline Blvd.	50		Improvements to Existing Network	73,600	2	4	Design and Engineering
Townsend Street	02nd Street	04th Street	36		Improvements to Existing Network	205,000	2	4	Design and Engineering
Townsend Street	04th Street	Division Street	36		Improvements to Existing Network	3,000	2	4	Design and Engineering
Townsend Street	Embarcadero, The	02nd Street	36		Improvements to Existing Network	32,000	2	3	TBD
Wiggle, The	Church Street	Page Street	30		Improvements to Existing Network	16,000	2	3	TBD
07th Avenue	Kirkham Street	Lawton Street	65		Improvements to Existing Network	13,500	3	3	Conceptual Planning
11th Street	Market Street	Mission Street	25		Improvements to Existing Network	49,000	3	3	Conceptual Planning
16th Street	Market Street	South Van Ness Ave	n/a		Recommended study	22,000	3	3	Conceptual Planning
17th Street	Market Street	Bryant Street	n/a		Recommended study	40,000	3	3	Conceptual Planning
17th Street	Market Street	Harrison Street	n/a		Recommended study	40,000	3	3	Design and Engineering
17th Street	Harrison Street	Potrero Avenue	n/a		Recommended study	40,000	3	3	Design and Engineering
17th Street	Potrero Avenue	Potrero Avenue	n/a		Recommended study	120,000	3	3	TBD
18th Street	Diamond	Harrison Street	n/a		Potential Inclusion	178,000	3	4	Conceptual Planning
19th Avenue	Holloway Avenue	Buckingham Way	75		Improvements to Existing Network	3,000	3	3	Conceptual Planning
22nd Street	Potrero Avenue	Chatenoga Street	44		Improvements to Existing Network	81,000	3	3	Conceptual Planning
Battery East Path	Lincoln Boulevard	Golden Gate Bridge	202		Improvements to Existing Network	22,000	3	4	Conceptual Planning
Buckingham Way	19th Avenue	20th Street Avenue	75		Improvements to Existing Network	22,000	3	4	Conceptual Planning
Buckingham Way	20th Avenue	21st Street Avenue	75		Improvements to Existing Network	132,000	3	3	Conceptual Planning
Cesar Chavez Street C	20th Avenue	Mississippi (US280)	60		Improvements to Existing Network	TBD	3	TBD	Design and Engineering
Chenery Street	30th Street	Diamond Street	45		Improvements to Existing Network	TBD	3	TBD	Design and Engineering
Clayton Street	Page Street	Panhandle Path	68		Improvements to Existing Network	79,000	3	4	Conceptual Planning
Evans Avenue	03rd Street	Cesar Chavez Street	90		Improvements to Existing Network	31,000	3	3	Conceptual Planning
Geneva Avenue	Ocean Avenue	Pans Street	765		Improvements to Existing Network	768,000	3	3	Conceptual Planning
Horseshoe Court Path	Fulton Street	Conservatory Dr East	07		Improvements to Existing Network	3,000	3	3	Conceptual Planning
Indiana Street	23rd Street	Cesar Chavez Street	45		Improvements to Existing Network	3,000	3	4	Design and Engineering
Lyell Street	Alamany Boulevard	Bosworth Street	705		Improvements to Existing Network	4,500	3	4	Conceptual Planning
Mansell Street	San Bruno Avenue	University Street	n/a		Potential Inclusion		3	4	Conceptual Planning

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Market Street [eastbound] A,B,C	Noe Street	Sanchez Street	50		Improvements to Existing Network	TBD	3	4	Conceptual Planning
Market Street [eastbound] A,B,C	Church Street	Dolores Street	50		Improvements to Existing Network	TBD	3	4	Conceptual Planning
Market Street [eastbound] A,B,C	Castro Street	Noe Street	50		Improvements to Existing Network	TBD	3	4	TBD
Market Street [eastbound] D	Sanchez Street	Church Street	50		Improvements to Existing Network	TBD	3	4	Conceptual Planning
Market Street [westbound] D,E	Dolores Street	Guerrero Street	50		Improvements to Existing Network	1,000,000	3	4	Conceptual Planning
Market Street [westbound]	Noe Street	17th Street			Improvements to Existing Network	TBD	3	4	Conceptual Planning
Market Street [westbound] A,B,C	Buchanan Street	Church Street	50		Improvements to Existing Network	TBD	3	4	Conceptual Planning
Market Street [westbound] A,B,C	Church Street	Sanchez Street	50		Improvements to Existing Network	TBD	3	4	Conceptual Planning
Market Street [westbound] D,E	Octavia Street	Laguna Street	50		Improvements to Existing Network	TBD	3	4	Design and Engineering
Market Street [westbound] D,E	Laguna Street	Buchanan Street	50		Improvements to Existing Network	TBD	3	4	Conceptual Planning
Market Street [westbound] F,G	Sanchez Street	Noe Street	50		Improvements to Existing Network	TBD	3	4	Conceptual Planning
Masonic Avenue	Paga Street	Geary Boulevard	55		Recommended study	302,800	3	4	Conceptual Planning
Panhandle Path E-W @ Masonic Avenue	East Side of Masonic Avenue Intersection	West Side of Masonic Avenue Intersection				TBD	3	4	Conceptual Planning
Panhandle Path N-S @ Ashbury St	Oak Street	Panhandle Path(E-W)	55		Improvements to Existing Network	21,000	3	4	Design and Engineering
Panhandle Path N-S @ Baker St	Oak Street	Panhandle Path(E-W)	n/a		Changes to Existing Network	21,000	3	4	Design and Engineering
Panhandle Path N-S @ Clayton St	Oak Street	Panhandle Path(E-W)	55		Improvements to Existing Network	21,000	3	4	Design and Engineering
Piercia Street	Mansell Street	Ocean Avenue			Changes to Existing Network	TBD	3	4	Design and Engineering
Polk Street A	Oakdale Avenue	Market Street	25	70	Improvements to Existing Network	3,000	3	TBD	Design and Engineering
Polk Street B	Hayes Street	Market Street	25		Improvements to Existing Network	1,000	3	3	Design and Engineering
Polk Street C	Lech Walesa	Hayes Street	25		Improvements to Existing Network	2,000	3	3	Design and Engineering
Sanchez Street	Grove Street	Lech Walesa	25		Improvements to Existing Network	2,000	3	3	Design and Engineering
03rd Street	Day Street	30th Street	49		Improvements to Existing Network	TBD	3	TBD	Design and Engineering
17th Street	Camp Way	Bayshore Boulevard	05		Changes to Existing Network	6,000	4	4	Design and Engineering
Barnesville Avenue	Corbett Street	Market Street	40	50	Improvements to Existing Network	3,000	4	4	Design and Engineering
Bosworth S/O Shaughnessy Blvd	Loomis Street	Jerrold Avenue	25		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Chain of Lakes Dr West	San Jose Avenue	Portola Drive	55		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Columbus Avenue	Chain of Lakes Dr East	Bercut Equitation Fld	730		Improvements to Existing Network	15,000	4	4	Conceptual Planning
Corbett Avenue	Washington Street	Northpoint Street	11		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Division Street	Clayton Street	17th Street	50	40	Improvements to Existing Network	TBD	4	TBD	TBD
Dolores Street	Townsend Street	11th Street	36		Improvements to Existing Network	3,000	4	4	Design and Engineering
Embarcadero Promenade The	28th Street	San Jose Avenue	45		Changes to Existing Network	3,000	4	4	Design and Engineering
Great Highway, The	North Point Street	King Street	05		Improvements to Existing Network	3,000	4	4	Design and Engineering
Greenwich Street	Balboa Street	Point Lobos Avenue	95		Improvements to Existing Network	3,000	4	4	Conceptual Planning
Hayes Street	Octavia Street	Lyon Street	08		Improvements to Existing Network	3,000	4	4	Design and Engineering
Hayes Street	Van Ness Avenue	Polk Street	20		Changes to Existing Network	3,000	4	4	TBD
Hayes Street	Divisadero Street	Broderick Street	30		Changes to Existing Network	3,000	4	4	Preliminary Design and Engineering
Hayes Street	Scott Street	Divisadero Street	30		Changes to Existing Network	3,000	4	4	Preliminary Design and Engineering
Holloway Avenue	Broderick Street	Baker Street	30		Changes to Existing Network	3,000	4	4	Design and Engineering
Industrial Street	19th Avenue	Plymouth Avenue	90		Improvements to Existing Network	3,000	4	4	TBD
Loomis Street	Bayshore Boulevard	Loomis Street	25		Changes to Existing Network	3,000	4	4	TBD
Mama Boulevard	Industrial Street	Barnesville Avenue	25		Changes to Existing Network	3,000	4	4	TBD
Paga Street	Laguna Street	Lyon Street	02		Recommended study	120,000	4	4	TBD
Palou Avenue	Stanyan Street	Market Street	32		Improvements to Existing Network	3,000	4	4	Design and Engineering
Palou Avenue	Newhall Street	Phelps Street	70	07	Changes to Existing Network	TBD	4	TBD	Conceptual Planning
Parker Avenue	03rd Street	Newhall Street	70	07	Changes to Existing Network	TBD	4	TBD	Conceptual Planning
Plymouth Avenue	Turk Street	Golden Gate Avenue	20		Improvements to Existing Network	3,000	4	4	Preliminary Design and Engineering
Port Lobos Avenue	Ocean Avenue	Holloway Avenue	90		Improvements to Existing Network	3,000	4	4	Preliminary Design and Engineering
Polk Street D	Great Highway, The	48th Avenue	95		Improvements to Existing Network	3,000	4	4	Corridor Planning
Portola Drive A	McAllister Street	Grove Street	25		Improvements to Existing Network	9,000	4	4	Conceptual Planning
Portola Drive B	Santa Francis Boulevard	Santa Ana Avenue	50		Improvements to Existing Network	TBD	4	5	Design and Engineering
	Santa Ana Avenue	Santa Clara Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Portola Drive C	Santa Clara Avenue	Waihihan Way	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive D	Waihihan Way	Sydney/Fowler Avenue	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive E	Sydney Way / Fowler Avenue	Twin Peaks Boulevard	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive F	Twin Peaks Boulevard	Clipper Street	50		Improvements to Existing Network	TBD	4	5	Preliminary Design and Engineering
Portola Drive G	Clipper Street	Corbett Avenue	50		Improvements to Existing Network	250,000	4	5	Preliminary Design and Engineering
Post Street	Steiner Street	Market Street	16		Improvements to Existing Network	3,000	4	4	Preliminary Design and Engineering
Silver Avenue	Alemany Boulevard	Oakdale Avenue	70		Improvements to Existing Network	3,000	4	4	Preliminary Design and Engineering
Sutter Street	Market Street	Steiner Street	16		Improvements to Existing Network	3,000	4	4	Preliminary Design and Engineering
Webster Street	Hermann Street+B182	Grove Street	345		Improvements to Existing Network	3,000	4	4	Preliminary Design and Engineering
Woodside Avenue	Portola Drive	Laguna Honda Boulevard	60		Improvements to Existing Network	3,000	4	4	Preliminary Design and Engineering
05th Ave Path	Martin Luther King Jr. Dr	Lincoln Way	65		Improvements to Existing Network	16,000	4	5	Corridor Planning
15th Street	Market Street	Harrison Street	n/a		Recommended study	4,500	5	5	TBD
20th Avenue	Wawona Street	Lincoln Way	75		Improvements to Existing Network	83,000	5	5	TBD
23rd Street	Valencia Street	San Bruno	n/a		Improvements to Existing Network	4,500	5	TBD	TBD
25th Avenue	Lincoln Way	Kirkham Street	n/a		Potential Inclusion	4,500	5	TBD	Conceptual Planning
26th Street	Valencia Street	Hampshire Street	n/a		Recommended study	4,500	5	TBD	Conceptual Planning
34th Ave Path	Polo Fields Path	MLK Dr	85		Improvements to Existing Network	37,000	5	5	Conceptual Planning
Baker Street	Turk Street	Sacramento	n/a		Potential Inclusion	3,000	5	TBD	Design and Engineering
Battery Street	Embarcadero, The	Market Street	n/a		Improvements to Existing Network	4,500	5	TBD	TBD
Bay Street	Embarcadero, The	Fillmore Street	n/a		Recommended study	4,500	5	TBD	Conceptual Planning
Beach Street	Van Ness Avenue	The Embarcadero	n/a		Recommended study	4,500	5	5	TBD
Bosworth Street	Cayuga Avenue	Alemany Boulevard	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Brannan Street	Embarcadero, The	Division Street	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Broderick Street	Francisco Street	Marina Boulevard	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Brotherhood Way	Lake Merced	Arch Street	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
California Street	Masonic Avenue	Van Ness Avenue	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Capp Street	26th Street	15th Street	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Cargo Way	End	Q3rd Street	n/a		Potential Inclusion	4,500	5	5	Corridor Planning
Circular Avenue	Monterey Boulevard	Havelock	n/a		Potential Inclusion	4,500	5	5	Corridor Planning
Columbus Avenue	Northpoint Street	Beach Street	n/a		Potential Inclusion	4,500	5	5	TBD
Conservatory Drive West	Arguello Boulevard	John F. Kennedy Drive	65		Improvements to Existing Network	7,000	5	5	Conceptual Planning
Duboce Avenue	Valencia Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Duboce Park	Noe Street	Waller Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Embarcadero, The	Northpoint Street	Taylor Street	n/a		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Fell Street	Scott Street	Baker Street	n/a		Changes to Existing Network	4,500	5	5	Design and Engineering
Fort Mason Tunnel	Aquatic Park	Laguna Street	n/a		Recommended study	4,500	5	5	Design and Engineering
Francisco Street	Octavia Street	Laguna Street	n/a		Vestigial Bike Lane	4,500	5	5	TBD
Fremont Street	Howard Street	Harrison Street	n/a		Potential Inclusion	4,500	5	5	TBD
Front Street	Green Street	Jackson Street	n/a		Vestigial Bike Lane	4,500	5	5	Design and Engineering
Geary Boulevard	Divisadero	25th Avenue	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Golden Gate Avenue	Baker Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Greenwich Street	Polk Street	Octavia Street	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Grove Street	Scott Street	Baker Street	n/a		Vestigial Bike Lane	4,500	5	5	Conceptual Planning
Industrial Street	Oakdale Avenue	Loomis Street	n/a		Changes to Existing Network	4,500	5	5	Conceptual Planning
Jefferson Street	Embarcadero, The	Larkin Street	n/a		Recommended study	4,500	5	5	Preliminary Design and Engineering
Jennings Street	Evans Avenue	Cargo Way	n/a		Potential Inclusion	4,500	5	5	Design and Engineering
Kearny Street	Market Street	Columbus Avenue	n/a		Potential Inclusion	4,500	5	5	TBD
Kirkham Street	Lower Great Hwy	The Great Highway	40		Improvements to Existing Network	13,000	5	5	Conceptual Planning
Mariposa Street	Pennsylvania	Indiana Street	23		Improvements to Existing Network	4,500	5	5	Conceptual Planning
Mendall Street	Palou Street	Oakdale Avenue	n/a		Improvements to Existing Network	4,500	5	5	Preliminary Design and Engineering
Mission Street	Embarcadero, The	14th Street	n/a		Improvements to Existing Network	4,500	5	5	Preliminary Design and Engineering

Street	FROM_Street	TO_Street	ROUTE_NUM	Secondary Route Number	POLICY_CLASS	Proj. Tot	FY BEGIN	FY of PERFORMANCE MEASURE	PERFORMANCE MEASURE
Mission Street Creek Bikeway	16th Street	04th Street	n/a		Improvements to Existing Network	4,500	5	5	Preliminary Design and Engineering
Oak Street	Scott Street	Baker Street	n/a		Potential Inclusion	4,500	5	5	Preliminary Design and Engineering
O'Farrell	Polk Street	Market Street	n/a		Potential Inclusion	4,500	5	5	Preliminary Design and Engineering
Pacific Avenue	Polk Street	Steiner Street	n/a		Potential Inclusion	4,500	5	5	Preliminary Design and Engineering
Perimeter Path	Avenue of the Palms		n/a		Changes to Existing Network	4,500	5	5	Preliminary Design and Engineering
Presidio Boulevard	Pacific Avenue	Geary Boulevard	55		Improvements to Existing Network	3,000	5	TBD	Preliminary Design and Engineering
Randolph Street	Ralston Street	Saint Charles Avenue	n/a		Changes to Existing Network	4,500	5	5	Preliminary Design and Engineering
Randolph Street	Vernon Street	Ralston Street	n/a		Changes to Existing Network	4,500	5	5	Preliminary Design and Engineering
Randolph Street	Arch Street	Vernon Street	n/a		Changes to Existing Network	4,500	5	5	Preliminary Design and Engineering
Romain Street Overpass	Market Street (eastside)	Market Street C56(westside)	44		Improvements to Existing Network	TBD	5	5	Preliminary Design and Engineering
Shotwell Street	14th Street	26th Street	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Stanyan Street	Fullton Street	Frederick	n/a		Potential Inclusion	4,500	5	5	TBD
Sunset Path	Ocean Avenue	Lake Merced Blvd	85		Improvements to Existing Network	19,000	5	5	TBD
Terry Francois Boulevard	China Basin Street	Illinois Street	n/a		Changes to Existing Network	4,500	5	5	TBD
Union Street	Steiner Street	Van Ness Avenue	n/a		Potential Inclusion	4,500	5	5	TBD
Vicente Path	Lower Great Highway	The Great Highway	60		Improvements to Existing Network	13,000	5	5	Conceptual Planning
Washington Street	Embarcadero, The	Columbus Avenue	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
Yosemite Avenue	03rd Street	Baytrail	n/a		Potential Inclusion	4,500	5	5	Conceptual Planning
20st Avenue	Sloat Boulevard	Buckingham Way	76		Improvements to Existing Network	120,000	TBD	TBD	TBD
29th Street	Dolores Street	Church Street	45		Potential Inclusion	3,000	TBD	TBD	TBD
29th Street	Sanchez Street	Church Street	49		Improvements to Existing Network	3,000	TBD	TBD	TBD
30th Street	Dolores Street	Chenery Street	45	49	Improvements to Existing Network	4,500	TBD	TBD	TBD
30th Street	Chenery Street	Church Street	49		Improvements to Existing Network	4,500	TBD	TBD	TBD
30th Street	Whitney Street	Sanchez Street	49		Improvements to Existing Network	4,500	TBD	TBD	TBD
Ashbury Street	Page Street	Panhandle Path			Changes to Existing Network	3,000	TBD	TBD	Conceptual Planning
Baker Street	Page Street	Panhandle Path	51		Changes to Existing Network	3,000	TBD	TBD	Conceptual Planning
Church Street	29th Street	30th Street	49		Changes to Existing Network	TBD	TBD	TBD	Design and Engineering
Golden Gate Avenue	Parker Avenue	Masonic Avenue	20		Changes to Existing Network	TBD	TBD	TBD	Design and Engineering
Jerrold Avenue	Barnevelde Avenue	Bayshore Boulevard	25		Improvements to Existing Network	TBD	TBD	TBD	Conceptual Planning
Kirkham Street	06th Avenue	The Great Highway	40		Improvements to Existing Network	TBD	TBD	TBD	TBD
Lake Merced Boulevard	Skyline Boulevard	John Muir Drive	85	0	Improvements to Existing Network	TBD	TBD	TBD	Design end Engineering
Lake Merced Boulevard	Skyline Boulevard	John Muir Drive	85		Improvements to Existing Network	TBD	TBD	TBD	Conceptual Planning
Lake Merced Path	Western Portion (N-S)		91			TBD	TBD	TBD	Conceptual Planning
Lake Merced Path	Northern Portion (E-W)	Eastern Portion (N-S)	885	85/86/91/95	Improvements to Existing Network	TBD	TBD	TBD	Corridor Planning
McAllister Street	Market Street	Masonic Avenue	20		Improvements to Existing Network	TBD	TBD	TBD	Corridor Planning
McAllister Street	Baker Street	Polk Street	20		Improvements to Existing Network	TBD	TBD	TBD	Conceptual Planning
Monterey Boulevard	San Jose Avenue	Junipero Serra	70		Improvements to Existing Network	TBD	TBD	TBD	Design and Engineering
Ocean Avenue	Mission Street	Junipero Serra	84	90	Improvements to Existing Network	TBD	TBD	TBD	Conceptual Planning
Ocean Avenue	29th Street	Day Street	49		Potential Inclusion	TBD	TBD	TBD	Conceptual Planning
Sanchez Street	Broadway	Market Street	17		Improvements to Existing Network	TBD	TBD	TBD	Conceptual Planning
Stockton Street	Junipero Serra Boulevard	Lake Merced Boulevard	86		Improvements to Existing Network	TBD	TBD	TBD	Design and Engineering
Winston Drive						TBD	TBD	TBD	TBD
Bayshore Boulevard 2									Conceptual Planning
--- DONE W 3RD ST LIGHT RAIL	Hester Avenue	San Mateo County Line	05						Conceptual Planning

9.0 APPENDICES

MAY 2005

APPENDIX 9A

Consultant Project Summary Sheets

MAY 2005

SUMMARY SHEET OUTLINE

2ND STREET, MARKET TO TOWNSEND

Project Description

Second Street is a high volume downtown street in the SOMA section of San Francisco. Bicycle improvements to Second Street would provide an important connection between Market Street and Pac Bell Park in the South Beach section. It would also connect bicyclists with bike routes on Howard, Folsom, Townsend, and King Streets. The street also provides important connections for motor vehicles, trucks, and transit.

Second Street generally has two lanes of travel in each direction with parking on both sides of the street. The street serves residential and retail uses. The street is 52' 6" wide between Market and Harrison Street, and between King and Townsend Streets, and widens to 62' 6" between Harrison and Townsend Streets. To allow for the installation of bike lanes, one travel lane would need to be removed in each direction in the 52' 6" wide section, and one of the four travel lanes would need to be removed from the section south of Harrison, except between Townsend and King Streets.

History/Background

Second Street was identified as a part of the comprehensive bicycle route network developed for the San Francisco Bicycle Plan, which was approved by the SF Board of Supervisors in 1997. In 1998, the DPT studied the potential installation of bike lanes on Second and looked at the impacts of bike lane removal to provide bike lanes. The lane removals were reviewed, but not approved by the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT). The project was reviewed by the Parking and Traffic Commission, who also voted against the project.

DPT's West Approach Retrofit Project in SOMA will affect Second Street. This project will close streets under the freeway and alter the lane configurations. The project will be completed in 2008.

Second Street is currently identified as the preferred alignment for possible rail extension from the current Caltrain Station to the Transbay Terminal. The potential for redesign of the entire street is possible if construction of the extension is approved and excavation for the new tunnel is used instead of boring.

Design Segments

- Market to Mission: Currently, there are three travel lanes (2 southbound and 1 northbound) and parallel parking on both sides of the street. Bike lanes could be provided on this segment if one of the southbound travel lanes is removed.
- Mission to Harrison: This segment has two travel lanes in each direction and parallel on-street parking. While the width of the street is the same as the previous section, there is an additional northbound travel lane. Thus, the travel and parking lane widths are narrower.

- Harrison to Townsend: This segment currently has two travel lanes in each direction and parallel on-street parking on both sides of the street. The street is 62'6" wide in this section, so only one lane of travel would need to be removed. Based on traffic volumes and demand, removal of the southbound lane would be preferable.
- Townsend to King: This segment has two southbound lanes at King Street (a left- and right-turn only lane), one northbound lane, and on-street parking on both sides of the street and is 52' 6"" wide. A northbound bike lane could be striped the entire length, with a southbound bike lane leading into the turn lanes. No lanes or parking would have to be removed.

Capacity

- The traffic operations impact associated with travel lane removal in Option 1 was studied by DPT in 1998. Previous analysis should be referred to or updated with new counts as needed. Loss of capacity on 2nd Street may result in severe congestion in some sections.

Transit

- MUNI operates the 15, 9, 71, and 10 bus lines on Second Street. Due to lane removal, bus service will likely be affected because of the reduction in capacity.

Bus Route	From	To	Service Frequency At PM Peak
15	Market	Brannan	7 minutes
9	Market	Mission	8 minutes
71	Market	Mission	10 minutes
10	Howard	Townsend	10 minutes

- There is currently a heavy left turn volume from 2nd Street onto Folsom Street. This must be addressed for period until bridge traffic is modified to ensure that transit is not negatively impacted by proposed travel lane reductions. Alternative designs should include a left-turn pocket or other treatment to allow through traffic to flow through while vehicles are waiting to turn left.

Parking

- Because there is high demand for parking on Second Street, on-street parking will not be removed or affected in Option 1. Options requiring parking removal are not recommended.

Pedestrian Concerns

- The proposed bicycle improvements benefit pedestrians by decreasing the effective crossing distance across Second Street. While the curb-to-curb distance will remain constant, the number of travel lanes will be reduced, so crossing at signalized or unprotected crosswalks will be simplified.

Land Use

- The land use along Second Street is comprised of a mix of residential, office, and retail. No land use conflicts would be associated with the proposed changes.

Other Departments or Agencies

- MUNI should be involved with the development of plans on 2nd Street that may affect their service.

Next Steps

- Capacity analyses associated with the travel lane reductions should be conducted by DPT.
- Parking supply and demand should be determined for areas where removal of a parking lane is the preferred design.



①

1. 2nd between Market and Mission, looking southeast. The redevelopment plan for this area calls for widening the sidewalks to improve the pedestrian environment.



②

2. Photo to be replaced



③

3. 2nd at Mission, looking southeast. This section (between Market and Harrison) is 52 feet wide.



④

5. 2nd and Harrison, looking southeast. 2nd Street accommodates both MUNI and SamTrans bus service. South of Harrison, the street widens to 62 feet.



⑤

6. 2nd between Harrison and Bryant, looking northwest. Bike improvements will need to account for dedicated turn lanes.



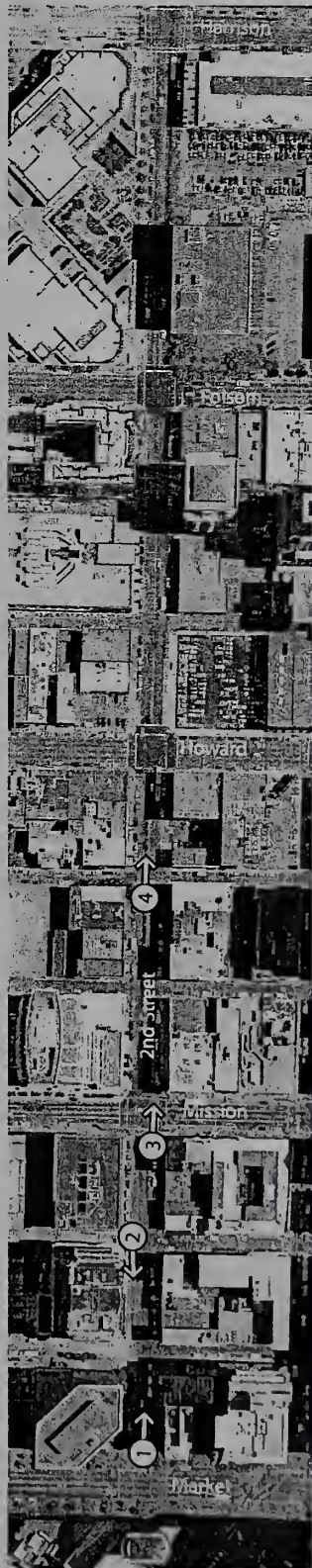
⑦

7. 2nd Street approaching Brannan, looking southeast. A "Bicycles Allowed Use of Full Lane" has been posted here. Trucks use Brannan to access the Bay Bridge.



⑧

8. 2nd approaching Townsend, looking southeast. 2nd provides a connection to Pac Bell Park and the Embarcadero.



2nd Street

Market St. to Townsend St.

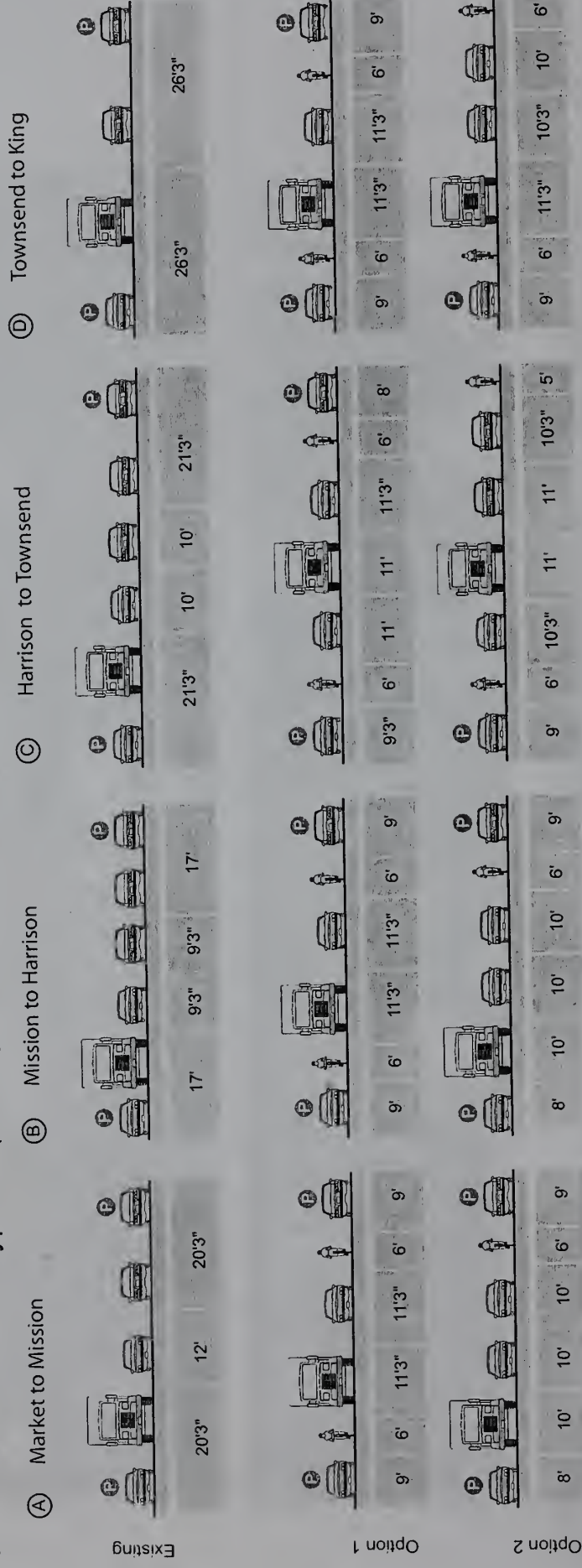


This draft diagram is designed for public input and discussion purposes. This is a representative diagram and is not based on actual survey data. All information presented in this diagram is subject to modification.

DRAFT 11/26/03



Street Cross-Section Typicals (looking southeast towards Townsend)



SUMMARY SHEET OUTLINE

5TH STREET, MARKET TO TOWNSEND

Project Description

Fifth Street is a high volume downtown street in the SOMA neighborhood of San Francisco. It is designated as a Major Arterial in the San Francisco Bicycle Plan. Bicycle improvements to Fifth Street would provide an important connection between Market Street and the Caltrain Depot in the South Beach section, and would connect to the popular Howard and Folsom Street bike lanes. The street also provides important connections for motor vehicles, trucks, and transit.

Fifth Street has two lanes of travel in each direction with parking on both sides of the street. The street serves residential and retail uses. The street is 52'6" wide between Market and Mission Street and widens to 62'6" south of Mission Street. To allow for the installation of bike lanes, one travel lane would need to be removed in each direction on the 52'6" wide section, and one of the four travel lanes would need to be removed from the section south of Mission.

History/Background

Fifth Street was identified as a part of the comprehensive bicycle route network developed for the San Francisco Bicycle Plan, which was approved by the SF Board of Supervisors in 1997. In 1998, the DPT studied the potential installation of bike lanes on Fifth Street and looked at the impacts of bike lane removal to provide bike lanes. The lane removals were reviewed, but not approved by the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT).

DPT's West Approach Retrofit Project in SOMA will affect Fifth Street. This project will close streets under the freeway and alter the lane configurations. The project will be completed in 2008.

The San Francisco County Transportation Authority Market Street study, with final recommendations to be developed December 2003, addresses intersecting streets including Fifth, and may provide recommendations that could influence intersection LOS conditions on Fifth Street.

Design Segments

- Market to Mission: Currently, there are two travel lanes in each direction and parallel parking on both sides of the street. Bike lanes could be provided on this segment if one travel lane is removed in each direction. In the event that permanent lane removal cannot be accomplished in both directions due to capacity issues, additional bicycle facility options to be investigated should include a combined peak hour tow-away parking lane and bike lane subject. This treatment is included in the Bike Plan Update Supplemental Design Guideline as 11A.
- Mission to Harrison: This segment has two travel lanes in each direction and parallel on-street parking on both sides of the street. The street is 62'6" wide in this section, so only

one lane of travel would need to be removed. Based on their studies, DPT recommends that if a lane is removed, that it be a southbound lane.

- Harrison to Brannan: This segment currently has two travel lanes in each direction and parallel on-street parking on both sides of the street. The street is 62'6" wide in this section, so only one lane of travel would need to be removed. Based on their studies, DPT recommends that if a lane is removed, that it be a southbound lane.
- Brannan to Townsend: This segment has two travel lanes in each direction and on-street parking on both sides of the street. The street is 62'6" wide in this section. DPT recommends that one lane be removed, and one lane be converted to an alternating left turn lane to create space for bicycle lanes in each direction.

Capacity

- According to DPT's Level of Service Analysis conducted in 1998 of what is described here as Option 1, the reduction of a travel lane on Fifth Street would result in a Level of Service "F" at Mission, Howard, and Harrison Streets, indicating that the demands of the intersection exceed capacity. The impact of travel lane reductions to traffic operations on Fifth Street should be studied further, as a lane removal is likely to create severe congestion along sections of the street. Coordination with the West Approach Retrofit Project and associated detours will be necessary.

Transit

- MUNI operates the numerous bus lines on Fifth Street (see table below). Due to lane removal, bus service will likely be affected because of the reduction in capacity.

Bus Route	From	To	Service Frequency At PM Peak
27	Market	Bryant	12 minutes
47	Harrison	Townsend	7 minutes
26	Market	Jessie	15 minutes
16AX/16BX	Market	Townsend	15 minutes

- MUNI supports maintaining two lanes in each direction. If an alternative requiring a three lane configuration is required to implement the recommended bicycle facility, then turn pockets or other design treatment should be used to minimize impact of turning vehicles to transit service.

Parking

- Because there is high demand for parking on Fifth Street, on-street parking will not be removed or affected. Given the lack of buildings fronting the street between Harrison and Brannan Streets under the freeway, there may be an opportunity for parking removals, though the space is still heavily used.

Pedestrian Concerns

- The proposed bicycle improvements benefit pedestrians by decreasing the effective crossing distance across Fifth Street. While the curb-to-curb distance will remain

constant, the number of travel lanes will be reduced, so crossing at signalized or unprotected crosswalks will be simplified.

Land Use

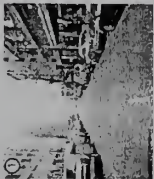
- The land use along Fifth Street is comprised of a mix of residential, office, and retail. No land use conflicts would be associated with the proposed changes.

Other Departments or Agencies

- MUNI should be involved with the development of plans on Fifth Street that may affect their service.

Next Steps

- Capacity analyses associated with the travel lane reductions should be conducted by DPT.
- Coordination with the West Approach Retrofit Project should take place so that necessary detours are accounted for.



1. 5th between Market and Mission, looking southeast. This section "Bicycles Allowed Use of Full Lane" signs are posted along this section of 5th.



2. 5th Street approaching Howard, looking southeast. A parking facility is located on the northeast side of the street.



3. 5th and Howard, looking southeast. The demand for on-street parking is relatively lower in this section.



4. 5th and Hamson, looking southeast. This section has low demand for on-street parking.



5. 5th and Bryant, looking southeast. The cyclist is attempting to make a left-turn onto Bryant.



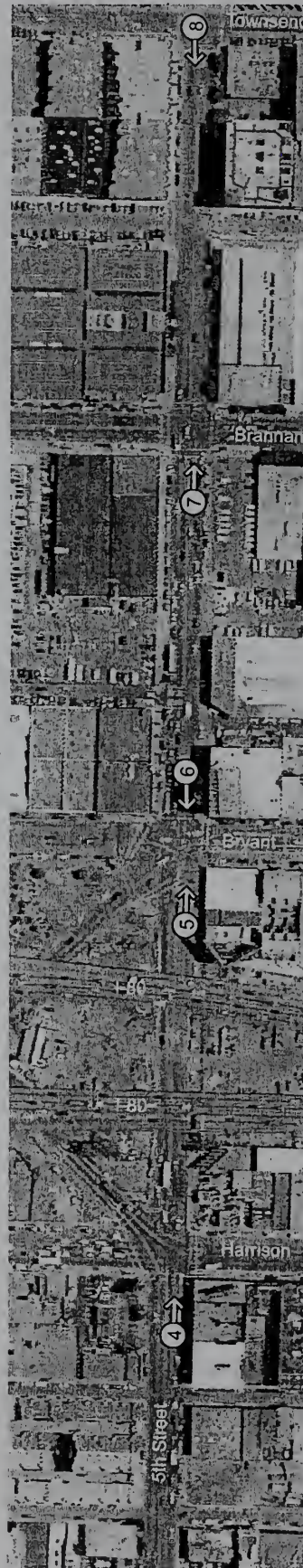
6. 5th and Bryant, looking northwest. The double-right turn lanes present a hazard for bicyclists that need to continue straight on 5th.



7. 5th approaching Brannan, looking southeast. There is a mix of parallel end diagonal parking on the southwest side of the street.



8. 5th and Townsend, looking northwest. Townsend provides an important north-south connection between the Embarcadero and Eighth.



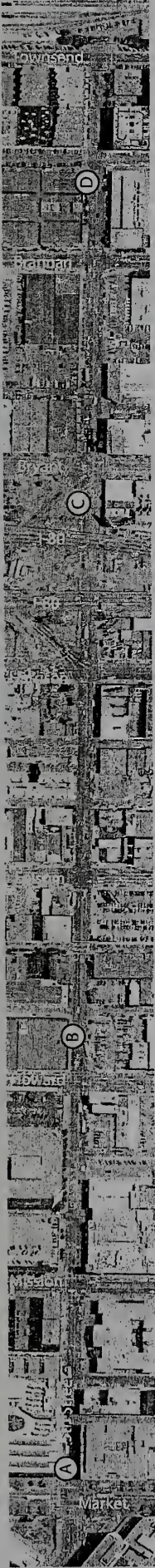
5th Street

Market St. to Townsend

This draft diagram is designed for public input and discussion purposes. This is a representative diagram and is not based on actual survey data. All information presented in this diagram is subject to modification.

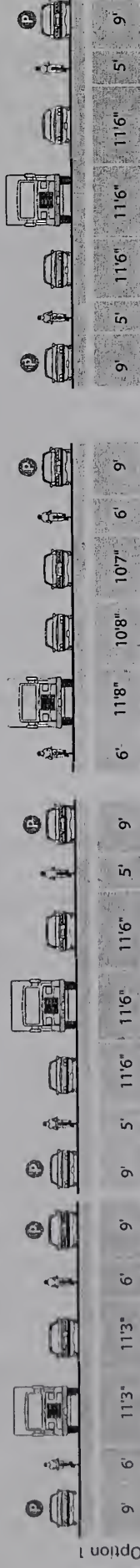
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Street Cross-Section Typicals (looking southeast towards Townsend)

- (A) Market to Mission
- (B) Mission to Harrison
- (C) Harrison to Brannan
- (D) Brannan to Townsend



5th Street
Market to Townsend

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This is a representative diagram and is not based on actual survey data.
All information presented in this diagram is subject to modification.

DRAFT 11/26/03



14TH STREET

SUMMARY SHEET OUTLINE

General Project Description

The existing 14th Street configuration from Market to Dolores Streets is two-way with a 17'-6" combined through and parking lane westbound to Market, and a 10'-0" through lane and 17'-6" combined through and parking lane eastbound. East of Dolores Street, 14th Street transitions to a one-way, two-lane street with bike lane. The project would (Option A) preserve two-way operation and add an eastbound bicycle lane with the removal of one eastbound lane, or (Option B) convert 14th Street from Market to Dolores Streets to one-way and extend the bike lane through this block. Market Street has an existing inbound bike lane at 14th Street. An existing triangular-shaped diverter island/pedestrian refuge would be removed and a new curb extension installed, reducing the overall pedestrian crossing distance. The existing signal pole could remain in place with the new curb extension built around it.

History/Background

In 1970, 14th Street was converted from a two-way street to a one-way eastbound street from Market to Guerrero Streets. The block of 14th Street between Market and Dolores Streets was converted back to a two-way street in 1984. Most recently there have been numerous requests to relieve the back-up that occurs on the eastbound 14th Street approach to Market Street. In 2000, an eastbound bike lane was striped on 14th Street starting at Dolores Street.

Design Segments

Option A Design:

This proposed design includes the following features:

- Re-striping of 14th Street to retain the westbound 17'-6" combined parking and through lane, a 12'-6" eastbound through lane, a new 5'-0" bicycle lane, and a 9'-0" parking lane by removing an eastbound lane.
- Preserve existing triangle island right-turn diverter/pedestrian refuge.

Option B Design:

This proposed design includes the following features:

- Re-striping of 14th Street from two-way to one-way eastbound travel, removing the westbound lane and creating a 19'-0" combined parking and through lane, an 11'-0" through lane, a 5'-0" bicycle lane, and a 9'-0" parking lane.
- Reconfiguration of the Market Street and 14th Street intersection including removal of the existing triangle island right-turn diverter/pedestrian refuge.
- Construction of a curb extension at the east corner of 14th and Market Streets.

Capacity

Option A Design:

- Elimination of the eastbound lane will have local traffic impacts. Currently, eastbound 14th Street queues usually do not clear the Market Street intersection during AM peak

hour traffic signal cycles, indicating existing Level of Service at or near F for the approach. Queues were observed to regularly reach back to Sanchez Street. Elimination of an eastbound lane will further exacerbate these conditions and lead to spillover traffic to neighboring streets. The 14th Street traffic volumes at Market Street do not warrant converting the second eastbound lane to a Left Turn Only lane onto Market Street.

Option B Design:

- Elimination of two-way travel on this one-block segment may impact ability of local residents and merchants to complete local vehicle trips. However, surrounding streets offer reasonable alternate routes for motorists currently using 14th Street westbound between Dolores and Market Streets.

Transit

Option A Design:

- Service to the 27 Corbett would be impacted by a traffic backup created by loss of eastbound lanes. Transit on Church and Market Streets would be impacted by any reallocation of green time from those streets to 14th Street to compensate for the loss of the eastbound lane.

Option B Design:

- No transit impacts.

Parking

Option A Design:

- No parking impacts.

Option B Design:

- No parking would be lost. Direction of parking on north-side of street would be reversed. Meter poles would have to be relocated.
- Optional parking configuration includes diagonal parking on north side of 14th Street, with curbside bicycle lane on south side of 14th Street.

Trucks

Option A Design:

- Truck traffic eastbound on 14th Street west of Market Street would be impacted by loss of the eastbound lane.

Option B Design:

- Local delivery trucks may be impacted, although there is light, if any, delivery traffic on this block. Alternate routes in the immediate area should provide acceptable access. This should be discussed and confirmed with businesses in the area.

Pedestrian Concerns

Option A Design:

- This design does not change pedestrian accommodation.

Option B Design:

- This design decreases the overall crossing distance for pedestrians along Market Street at the project area by filling in the current right turn pocket with a sidewalk bulb.

Land Use

- Surrounding land use is high-density residential and commercial retail. Potential conflicts with local merchants need to be addressed as part of all circulation and capacity analyses.

Other Departments or Agencies

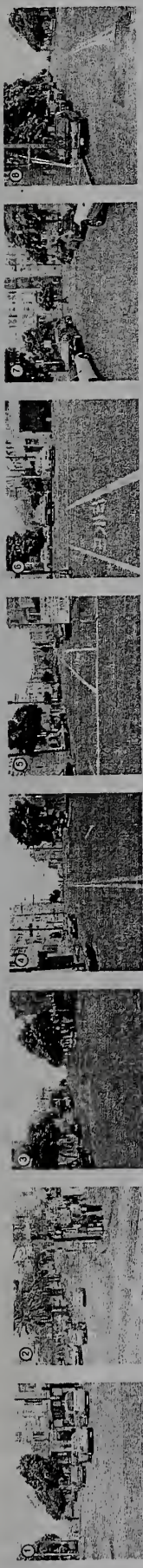
- Muni should be consulted on this project regarding any impacts to Market Street and Church Street transit lines. None are foreseen with Option B.
- No Muni lines run directly on 14th Street between Market and Dolores Streets, but do run on 14th Street just west of the project area. Any changes to signal timing at this intersection will likely affect Muni operations on one or both of these streets.

Preliminary Cost Estimate

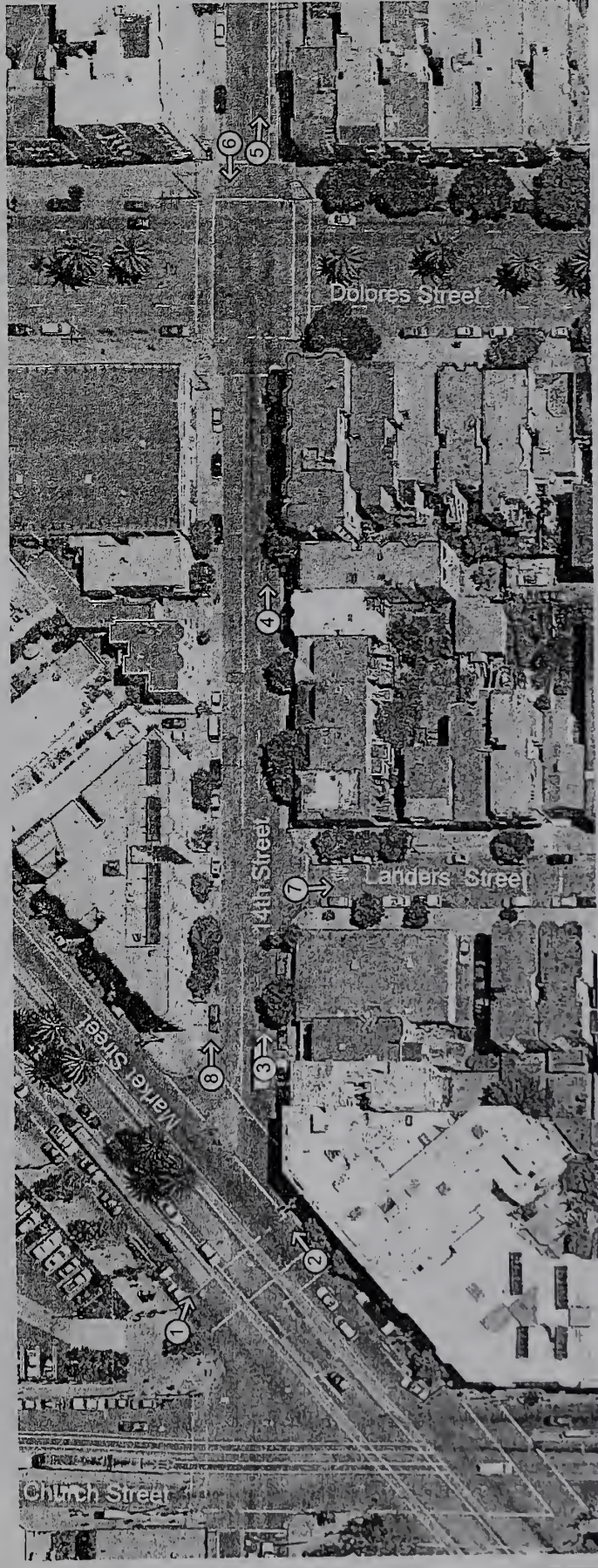
- Option A: \$10,000.
- Option B: \$81,000.

Next Steps

- Analysis of potential impacts to local merchants resulting from changes to local circulation patterns resulting from the elimination of westbound vehicle travel on 14th Street (Option B).



1. View of 14th from the west side of Market. The Market/14th intersection essentially has five approaches, including Church. Two traffic lanes enter 14th.
2. View of Market approaching 14th. Note the Class II bicycle lane on Market.
3. Looking easterly along 14th east of Market. Between Market and Dolores, 14th's cross-section consists of parallel parking on both sides, one westbound traffic lane and two eastbound traffic lanes.
4. Looking easterly along 14th towards Dolores. Between Market and Dolores, 14th is 44 feet wide between curbs.
5. East of Dolores, 14th is a one-way eastbound roadway with a Class II bicycle lane.
6. View along 14th looking westerly across the Dolores intersection.
7. Landers is a one-way (northbound) local street serving residences south of 14th. It has parking on both sides and speed humps. Its intersection with 14th is located just easterly of Market spaces.
8. Looking easterly from Market along the north side of 14th. The north side of 14th, between Market and Dolores, has designated parallel parking spaces.



14th Street Existing Conditions

THIS DRAFT DIAGRAM IS DESIGNED FOR PUBLIC INPUT AND DISCUSSION PURPOSES.
THIS IS A REPRESENTATIVE DIAGRAM AND IS NOT BASED ON ACTUAL SURVEY DATA.
ALL INFORMATION PRESENTED IN THIS DIAGRAM IS SUBJECT TO MODIFICATION.

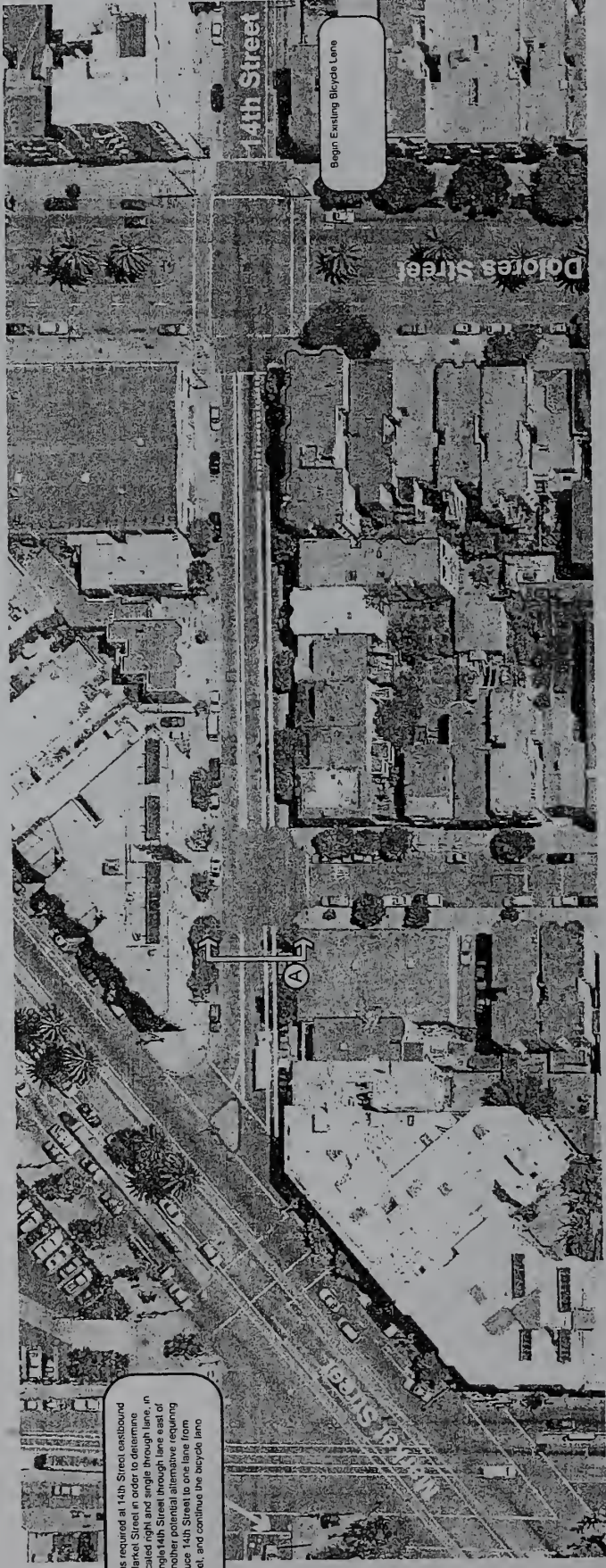
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14th Street

Design Concept (Option A)

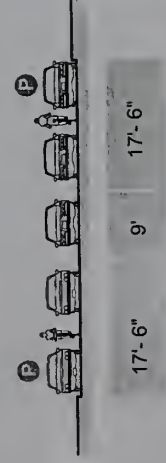


Additional analysis required at 14th Street eastbound on west side of Market Street in order to determine feasibility of dedicated right-turn lane and right-turn lane to Street. Another potential alternative requiring analysis is to reduce 14th Street to one lane from Sanchez to Market, and continue the bicycle lane

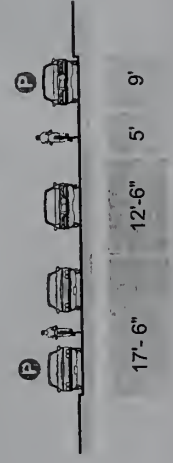


Sections

Ⓐ Existing Lane Configuration



Ⓐ Proposed Lane Configuration

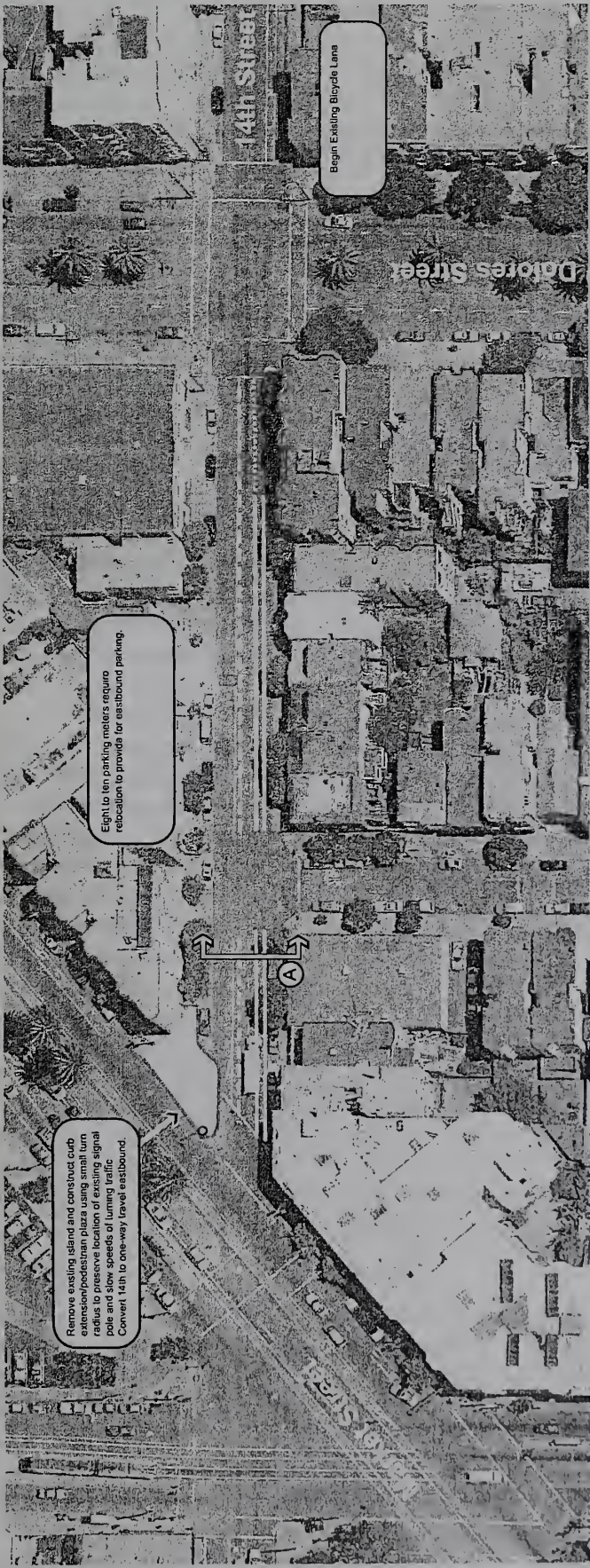


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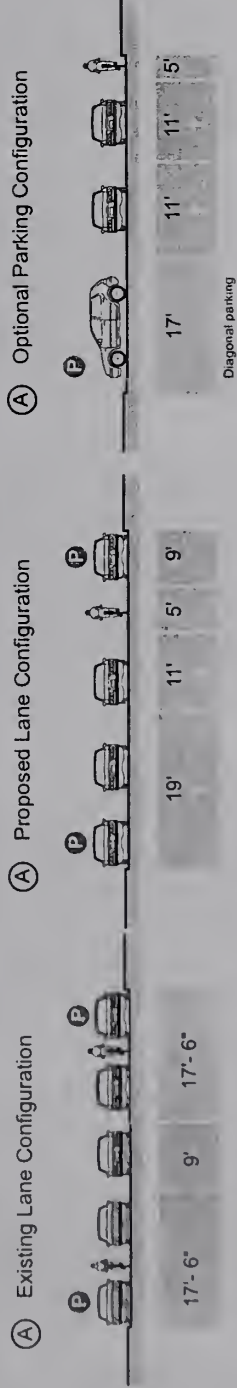
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14th Street

Design Concept (Option B)



Sections



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SUMMARY SHEET OUTLINE

16TH /17TH STREET CORRIDOR, MARKET STREET TO KANSAS STREET

Project Description

Sixteenth and seventeenth Streets are high-volume roadways in the central-eastern part of San Francisco. Bicycle improvements to the 16th/17th Street corridor would provide important east-west bicycle access south of Market Street, primarily in the Mission District. The east-west routes would provide connections to existing north-south bike lanes on Market, Valencia, Harrison, and Kansas Streets. Since 16th Street is a significant commercial corridor, it has a higher volume of traffic and higher parking turnover than 17th Street. There are numerous variations in width and lane configuration on both 16th and 17th Streets. Many of these variations are listed below in the description of design options for the various segments.

Bike lanes along 16th Street (Church Street to Harrison Street) as well as bicycle improvement options for 15th Street (as a couplet with the existing 14th Street bike lanes) were explored in the initial corridor conditions review. Upon review of the current data by the Bicycle Plan Update Technical Advisory Committee, it was determined that a proposal showing bike lanes along 16th Street (Church Street to Harrison Street) is premature until additional analysis can be undertaken. It is recommended that a full corridor study be explored to enhance the movement of several modes in this area, including Muni and bicycles.

To develop an improved bicycle facility that can be implemented in the short-term, it is most feasible to utilize segments of both 16th Street and 17th Street. Currently, the only segment of 16th Street where modifications to the existing condition appear acceptable is in the vicinity of Franklin Square, from Kansas Street in the east to Bryant Street to the west. This segment would require a north-south connection to 17th Street on Bryant Street along the western boundary of Franklin Square. Improvements on 17th Street from Bryant Street to Market Street are then required in order to improve bicycle circulation through this corridor. These segments are addressed below.

History/Background

As recommended in the 1997 Bicycle Plan, 17th Street (between Market and Kansas Streets) has been made part of Bicycle Route 40 as a Class III facility. Other than bicycle route signs, no other bicycle-related improvements have been made to this section of 17th Street. During the development of the 1997 Bicycle Plan, there was much public comment on whether 16th or 17th Streets should be the signed bicycle route. Seventeenth Street was chosen since there is no Muni service on 17th Street except for one block between Noe and Castro Streets.

Design Segments

- *16th Street, Market Street to South Van Ness Avenue:* Currently, there are three travel lanes: one eastbound, two westbound, and parallel parking on both sides. Due to existing double parking, frequent loading and unloading, bus service, and truck volumes, any reduction in the width or number of traffic lanes to stripe a bike lane would generate significant negative traffic impacts. Additional study is required to identify feasible bicycle improvement options for this segment of 16th Street that will limit impacts to transit service, and local parking supply, and that will improve pedestrian safety. The

segment from Market to Church Streets, due to lack of transit conflict and lower traffic volumes, does not have the same level of mode conflict described above and could be considered as a separate segment.

- *16th Street, South Van Ness Avenue to Bryant Street:* Currently, there are four narrow 9' travel lanes, 7' wide parking on both sides, and numerous driveways. Elimination of a single travel lane would not provide enough width to provide two standard bike lanes. Given the dense traffic and high parking turnover on 16th Street, shared use lanes with sharrows are not recommended. Additional study is required to identify feasible bicycle improvements for this segment of 16th Street that will limit impacts to transit service, local parking supply, and pedestrian safety.
- *16th Street, Bryant Street to Potrero Avenue:* Currently, there are four travel lanes and parking on both sides. Bike lanes could be provided by eliminating a travel lane and providing a two-way center turn lane. These alternatives are not recommended due to negative transit impacts. Elimination of parking on the south side of the street and establishment of four 10-foot wide traffic lanes (two in each direction) would provide adequate width for striping bike lanes in both directions along this segment.
- *16th Street, Potrero to San Bruno Avenues:* Currently, there are three travel lanes and parallel parking on both sides with relatively low parking demand. On-street parking could be removed from one side of the street and traffic lanes narrowed to provide adequate width for bike lanes.
- *16th Street, San Bruno Avenue to Kansas Street:* Currently, there are four travel lanes. On-street parking could be removed from one side of the street and traffic lanes narrowed to provide adequate width for bike lanes.
- *17th Street, Market to Harrison Streets:* Currently, there are two and three travel lanes, with parallel parking on both sides. To provide bike lanes, the lane width and number of travel lanes (from three to two) would need to be reduced. There are several design options for this segment, presented in the concept sections. These options include: (Option 1) bike lanes in both directions, (Option 2) a bike lane westbound with sharrows in the eastbound traffic lane, and (Option 3) sharrows in both travel directions.
- *17th Street, Harrison Street to Potrero Avenue:* Currently, there are two travel lanes and signs that state, "Bicycles Allowed Use of Full Lane" and parallel parking on both sides. This is an appropriate location for sharrows.
- *17th Street, Potrero Avenue to Kansas Street:* Currently, there are two travel lanes and parallel parking on both sides. The less-used parking on the north side could be removed to provide an eastbound bike lane (Option 1). A second alternative (Option 2) is to use the sharrows in both directions.

Capacity

- The impact of travel lane reductions to traffic operations on 16th and 17th Streets and intersecting streets need to be studied further.
- Critical intersection analysis and traffic counts still need to be acquired and studied.

Transit

- Sixteenth Street is a major transit route. In the Mission District it carries the 22-Fillmore, one of Muni's highest ridership lines. The 22-Fillmore currently experiences

delays due to traffic and congestion, as well as double-parking and traffic turning movements. The on-time performance for the 22-line is currently 70% of Muni's average.

- Reduction of travel lane width or elimination of travel lanes on 16th Street would cause further transit delays due to increased congestion. These impacts should be quantified through further analysis.
- The table below shows Muni's routes on 16th Street and their frequencies.

Bus Route	From	To	Service Frequency in p.m. Peak
22	Church Street	Kansas Street	6 minutes
33	Mission Street	Potrero Avenue	15 minutes
53	Valencia Street	Kansas Street	30 minutes
10	Rhode Island Street	Carolina Street	10 minutes
19	Rhode Island Street	De Haro Street	10 minutes

Parking

- A parking usage inventory was conducted by the SFBC to begin identifying the on-street parking demand and usage along this corridor. The following tables present the results of the SFBC parking inventory:

Parking on 17th, Potrero to Kansas:

Segment	North Side		South Side	
	Count	Approx. Spaces	Count	Approx. Spaces
Potrero to Utah	5	5	6	8
Utah to San Bruno	5	5	9	10
San Bruno to Vermont	8	10	9	10
Vermont to Kansas	8	8	8	9

Parking on 16th, Market to South Van Ness:

Segment	North Side		South Side	
	Count	Approx. Spaces	Count	Approx. Spaces
Market to Sanchez	16	18	16	18
Sanchez to Church	21	21	21	21
Church to Dolores	9	9	17	18
Dolores to	17	21	16	16

Guerrero				
Guerrero to Valencia	5	14	10	14
Valencia to Mission	12	15	11	11
Mission to Van Ness	10	11	15	19

Parking on 16th, Bryant to Kansas:

Segment	North Side		South Side	
	Count	Approx. Spaces	Count	Approx. Spaces
Bryant to Potrero	16	18	19	20
Potrero to Utah	9	9	5	5
Utah to San Bruno	9	10	4	4
San Bruno to Vermont	6	6	6	6
Vermont to Kansas	6	9	6	6

Trucks

- Due to local businesses in the retail corridor between Guerrero Street and South Van Ness Avenue, 16th Street has significant truck traffic and significant double parking. Improvements for truck access and parking should be considered in any long-term corridor study that is undertaken.

Pedestrian Concerns

- The proposed bicycle improvements could benefit pedestrians by decreasing the effective crossing distance on 16th or 17th Streets. While the curb-to-curb distance will remain constant, the number of travel lanes will be reduced at some locations, so crossing at signalized or unprotected crosswalks will be simplified for pedestrians.

Land Use

- The land use surrounding this corridor is a mix of retail, residential and some light industrial. On 16th Street, the surrounding properties are predominantly retail and on 17th Street, they are mostly light industrial. Residential use is also located along most blocks of both streets.

Other Departments or Agencies

- Coordination of future detailed study of the 16th Street corridor should be conducted as a joint project of the San Francisco County Transportation Authority, Department of Parking and Traffic and Muni.

Next Steps

- Capacity analyses associated with the travel lane reduction on 16th and/or 17th Streets should be conducted by DPT.
- A parking usage study could be conducted to determine the demand and "need" for on-street parking between Potrero Avenue and Kansas Street.
- Potential mitigation for parking loss between Potrero Avenue and Kansas Street should be identified.



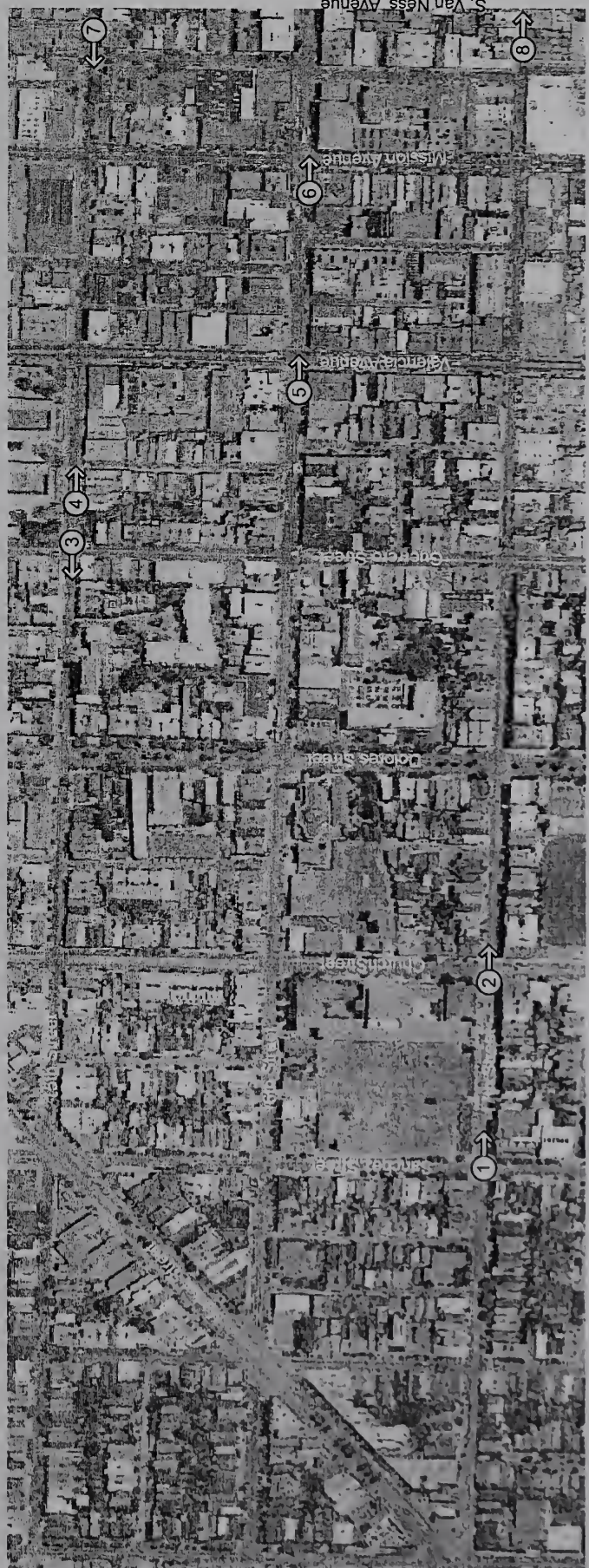
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16TH/17TH STREET
 MARKET ST. TO S. VAN NESS AVE.



1. 17th at Sanchez, looking eastward. This section of 17th is 44' wide with 2 lanes of travel and parallel parking on both sides.
2. 17th at Church, looking eastward. The multiple trolley tracks present hazards for cyclists on this street.
3. 15th at Guerrero, looking westward. This section of 15th is two way and primarily residential.
4. 15th between Guerrero and Valencia, looking eastward. This section of 15th is one-way with parking on both sides. Primarily residential area.
5. 15th at Valencia, looking eastward. This is a dense retail district with frequent double parking of delivery trucks. Note overhead bus lines.
6. 16th at Mission, looking eastward. The BART station is located at this intersection.
7. 15th west of S. Van Ness, looking west. This section of 15th is one way (westbound), with parking on both sides of the street.
8. 17th west of S. Van Ness, looking east. This section of 17th is 44' wide and runs through a mix of residential and industrial properties.

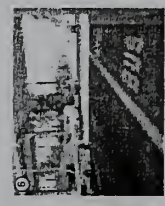




8. 16th and Kansas, looking eastward. Existing bike lanes on 16th.



7. 16th between Kansas and Vermont, looking west. The width of the roadway is 60' and there are four lanes of travel.



6. 16th underneath the I-280 overpass, looking west.



5. 16th and Portero, looking west.



4. 17th and Bryant, looking eastward. Recently installed signs indicate that bicyclists are allowed full use of the (narrow) lanes.



3. 17th, approaching Harrison, looking eastward. This section is 44' wide, but transitions to 36' east of Harrison. This segment travels through a primarily industrial area.



2. 16th and Harrison, looking west.



1. 16th and S. Van Ness, looking east. While the roadway width is 50', there are four (9') travel lanes and parking (7') on both sides of the street.



16TH/17TH STREET S. VAN NESS AVE. TO KANSAS ST.

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16TH STREET (LOOKING EAST)

(A) MARKET TO S. VAN NESS
PORTRERO TO SAN BRUNO



Existing

20' 10' 20'

Additional study is required to identify feasible bicycle improvement options for this segment of 16th Street that will limit impacts to transit service, local parking supply, and pedestrian safety.

(B) S VAN NESS TO BRYANT



16'

9' 9'

16'

Additional study is required to identify feasible bicycle improvement options for this segment of 16th Street that will limit impacts to transit service, local parking supply, and pedestrian safety.

(C) BRYANT TO PORTRERO
SAN BRUNO TO KANSAS



22'

10'

10'

18'



9'

6'

10'

10'

10'

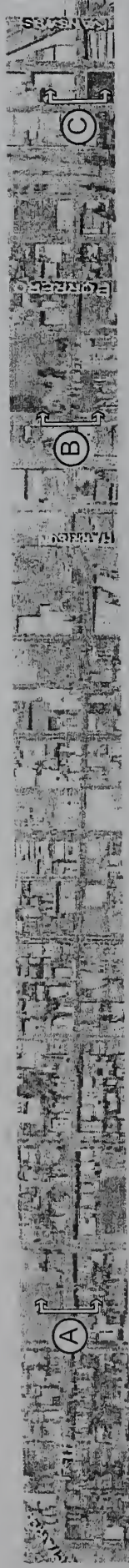
5'

16TH STREET
Market to Kansas

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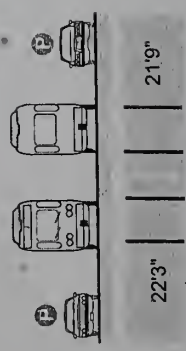
17TH STREET (FACING EAST)

(A) MARKET TO HARRISON

(B) HARRISON TO POTRERO

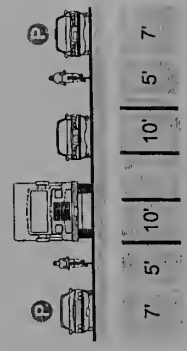
(C) POTRERO TO KANSAS

Existing

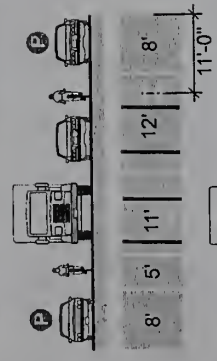


NOTE: Muni tracks are existing from Market Street to Church Street.
 All bike facility improvements for this section must address track location
 this segment.

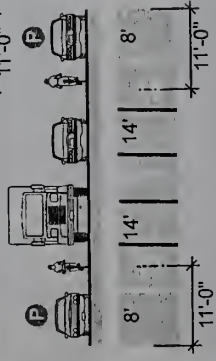
Option 1



Option 2



Option 3



17TH STREET

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SUMMARY SHEET OUTLINE

19TH AVENUE, HOLLOWAY STREET TO BUCKINGHAM WAY AND 20TH STREET

Project Description

Nineteenth Avenue is a high-volume roadway in the southwestern portion of San Francisco. Nineteenth Avenue is State Highway 1 through this area of San Francisco, and is under Caltrans jurisdiction. Additionally, 19th Avenue has a Muni light rail line and bus lines along the project section. The 19th Avenue west side sidewalk provides an important connection for cyclists and pedestrians between San Francisco State University (SFSU) and the Stonestown Galleria to the north.

History/Background

The SFSU connection is proposed in the 1997 Bicycle Plan and is described under Bicycle Route 775. The recommendation included in the original plan is for a two-way sidewalk bicycle path separated from the roadway by a 54" high fence. The original proposed configuration depicts the two-way bicycle path located between the existing sidewalk and the curb lane. Additional recommendations include motorist-warning signage at Buckingham Way. Any modification to the roadway, and segments the existing sidewalk within the Caltrans right-of-way would require Caltrans approval.

Design Segments

- Nineteenth Avenue, SFSU to Buckingham Way: The existing bicycle/pedestrian connection is a 10' sidewalk on the west side of the street. Option 1 for this section widens the existing sidewalk by five feet, while Option 2 provides a 2'-separated buffer between an 8' sidewalk and a 10' shared use path. A third option requiring Caltrans approval, is to extend the curb east into the roadway from Buckingham Way to approximately 200' south, gaining an additional 10' of sidewalk width for this segment.
- Buckingham Way, 19th to 20th Avenues: This short segment provides a connection between 19th and 20th Avenues. Currently, there are 5' sidewalks on each side of the street. Option 1 provides bike lanes on both sides of the street by removing the parking on the south side of the street. Option 2 maintains on-street parking, and narrows the parking lanes and travel lanes to provide a bike lane in the eastbound direction.

Capacity

- Capacity will not be affected since no travel lanes will need to be removed.

Parking

- On 19th Avenue, parallel parking exists along the street, and it will not need to be removed.
- On Buckingham Way, between 19th and 20th Avenues, Option 1 calls for the removal of the seven parking spaces on the south side of the street.

Transit

- Muni train and bus service on 19th Avenue should not be affected by any of the proposed changes.

Pedestrian Concerns

- The proposed bicycle improvements along 19th Avenue will benefit pedestrians by providing more space for both bicyclists and pedestrians. Currently, both bicyclists and pedestrians share the 10' sidewalk along 19th Avenue.
- ADA issues need to be addressed with each of the bicycle improvements options, particularly Option 2 where a grade difference is proposed between the bicycle and pedestrian pathways.

Land Use

- The majority of this section borders the SFSU property. The rest of the section borders residential properties.

Other Departments or Agencies

- The proposed changes on 19th Avenue and Buckingham Way will require property easements and/or acquisition from adjacent property owners.
- Caltrans coordination is required
- Department of Public Works coordination is required on ADA issues

Next Steps

- Identify property ownership boundaries adjacent to the west-side sidewalk on 19th Avenue.
- Identify potential mitigation for parking loss along Buckingham Way.
- Determine preliminary cost estimates for two options along 19th Avenue.
- Coordination with SFSU, DPW, Caltrans, and Pacific Gas & Electric is required to obtain easements and approvals required for sidewalk widening.
- Develop PS&E.



1. The sidewalk on the west side of 19th Avenue between San Francisco State University and Stonestown Galleria is used by pedestrians and cyclists.



2. Along the 19th Avenue sidewalk, looking north, to the west of the sidewalk, the property slopes downward towards SFSU and a residential development.



3. If the sidewalk is widened, trees and vegetation will need to be removed or accommodated in the design of the walkway.



4. The current sidewalk between SFSU and Buckingham is 10' wide. 19th Avenue is difficult to cross due to the number of travel lanes, travel speeds, and the presence of the Muni train line.



5. If the sidewalk is widened to accommodate bicyclists, utility pole guy wires will need to be moved.



6. Buckingham Way, looking east towards 19th Avenue. The roadway is 40' wide and the sidewalks are 5' wide. There is on-street parking on both sides of the street.



7. 10th Avenue looking south at Buckingham Way. The sidewalk on 19th is wider in this short section in front of the Stonestown Apartments.



8. Buckingham Way looking east towards 19th Avenue. Any widening of the sidewalk would require property acquisition or an easement.



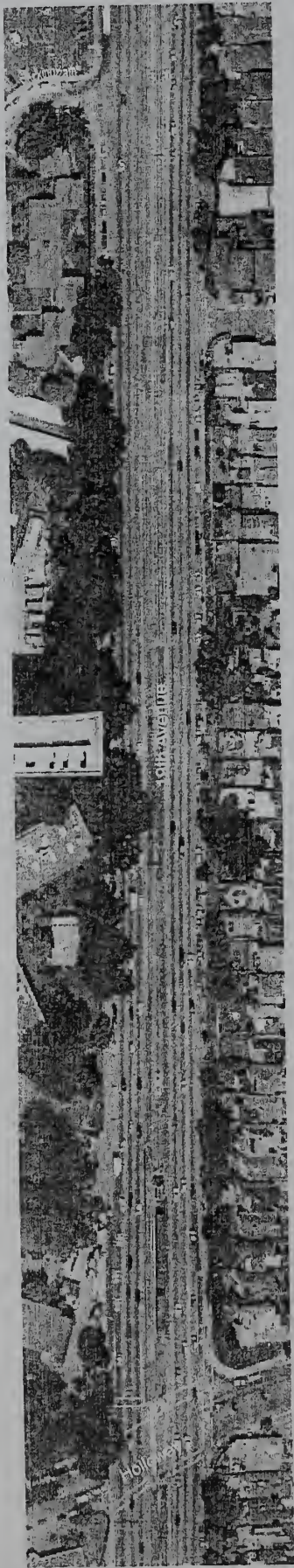
19th Avenue

Buckingham to Holloway

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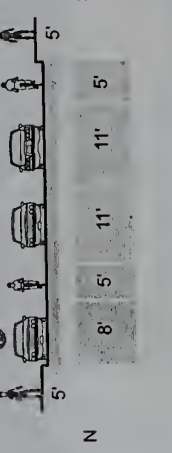
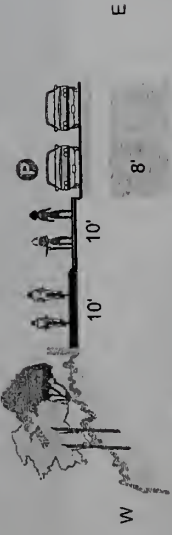
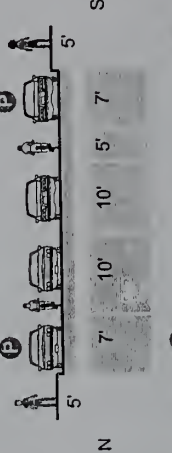
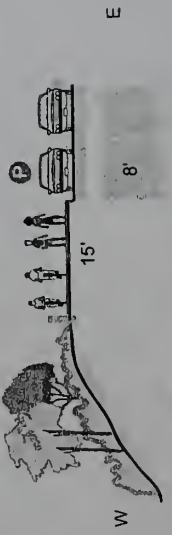
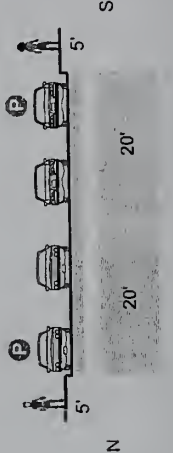


Street Cross-Sections

(A) 19TH AVENUE WALKWAY, SFSU TO BUCKINGHAM WAY



(B) BUCKINGHAM WAY, 19TH TO 20TH, LOOKING EAST



NOTE: A design variation for Options 1 and 2 requiring Caltrans approval is to extend the curb east from Buckingham Way south to SFSU to gain an additional 10' of sidewalk width for the northern-most segment of 19th Avenue. This option would eliminate private property impacts but would require removal of the existing travel/acceleration lane along this segment.

SUMMARY SHEET OUTLINE

ALEMANY BOULEVARD, SAN JOSE TO INDUSTRIAL

Project Description

Alemaný Boulevard is a moderately-high volume arterial in southern section of San Francisco. Bicycle improvements to Alemaný Boulevard would provide an important connection between Outer Mission and Excelsior neighborhoods. This bicycle lane project would connect the Outer Excelsior and Outer Mission with central San Francisco.

The majority of the length of Alemaný Boulevard provides three lanes of travel in each direction with parking on both sides of the street. The southern segment between San Jose and Rousseau passes through a primarily residential neighborhood. The northern portion serves solely as a transportation corridor adjacent to I-280, and is a separated couplet. To allow for the installation of bike lanes, one travel lane would need to be removed in each direction or a parking lane converted to a bike lane.

History/Background

Following construction of I-280, Alemaný Boulevard carries less traffic and is under capacity. The roadway between San Jose Avenue and Rousseau Street could be designated as Route 45 instead of the current alignment along Cayuga Avenue, which is less than ideal for cyclists wishing to avoid many 2-way STOPs.

Design Segments

- San Jose to Rousseau: Currently, there are three travel lanes in each direction with a central, 4'-wide median. There is on-street parking on both sides of the street. To provide for bike lanes, a travel lane would need to be removed in each direction in this section. The speed limit here is 35 mph. In addition, parking may need to be removed at critical intersections to allow for more capacity. An alternative to parking removal at key intersections is to remove the median at intersection in order to provide necessary width for vehicle turn lanes and bicycle lanes.
- Rousseau to South of Justin Drive: This segment is similar to the previous segment, except that there is no on-street parking for half this stretch and the travel lanes are one to two feet wider.
- South of Justin Drive to Couplet "split": This section has three travel lanes in each direction. While there is room for parking on both sides of the street, it is prohibited in the north-bound direction, and seldom used in the southbound direction. To simplify the installation of bike lanes, the parking lane could simply be converted to a bike lane and the number of lanes retained.
- Couplet Section: This section has two separated one-way roadways. Each roadway has three travel lanes and on-street parking in the southbound direction only. The parking is used heavily in the residential section of the street between Peralta and Ellsworth. The speed limit here is 40mph south-west bound and 45 mph north-east bound. The feasibility of a parallel two-way bike path adjacent to and separated from the north-east

bound couplet segment could also be analyzed in greater detail, dependent on available right-of-way and potential for safe connections back to the roadway.

- Putnam St. to US-101/I-280: This section has 3 travel lanes in each direction with no on-street parking. A consideration is to drop the north-east bound bike lane at Putnam Street and restripe north-east bound Alemany Boulevard with wide curb lanes and sharrows. Treatment for this transitional segment should be finalized dependent on final treatment recommendation for Alemany Circle.
- Alemany Circle (US-101/ I-280): This section of Alemany would be extremely challenging for bicyclists due to the high number of turning movements related to the on- and off-ramps and high speeds. Colored bike lane treatments across the highway on- and off-ramps may be used to help highlight the presence of bicycles across these high-conflict areas. Wider curb lanes and sharrows should also be considered to improve motorist awareness of bicyclists along this segment of the proposed project. Additional traffic analysis is required to determine the feasibility of reducing the vehicle lanes to one, and providing a bicycle lane and buffer.

Capacity

- The impact of travel lane reductions to traffic operations on Alemany Blvd will be minimal along most of its length, but there are key intersections, such as at Geneva and at Ocean, where more in-depth analysis is required.
- Analysis of Alemany Circle turning movements to determine feasibility of striped bike lane and/or color treatments at potential conflict points.

Transit

- MUNI operates buses on Alemany Blvd. The #67 bus travels on Alemany between Ellsworth and Putnam. The #23 bus also services Alemany Blvd. Due to the lane removal, bus service may be affected because of the reduction in capacity. However, the retention of at least two travel lanes in each direction will allow buses to pass any stopped vehicles. The 44 and 52 run on Alemany Blvd for approximately a quarter mile between Silver Ave and Rousseau. The 9X and 9AX are on Alemany Blvd as part of a one-block turnaround near Geneva Ave.

Parking

- In order to install bike lanes, on-street parking spaces may need to be removed at critical signalized intersections between San Jose and Rosseuau to allow for a vehicular turn lanes. Also, the on-street parking on the southbound side of the street between Ellsworth and Justin may be converted into a bike lane, as it is not highly used.

Pedestrian Concerns

- The proposed bicycle improvements benefit pedestrians by decreasing the effective crossing distance across Alemany Blvd. While the curb-to-curb distance will remain constant, the number of travel lanes will be reduced and crossing at signalized or unprotected crosswalks will be simplified.
- On the other hand, the proposed improvements that call for the removal of parking between US101 and I-280 may decrease the comfort of pedestrians along these sections of the sidewalk, due to the elimination of the buffer of parked cars.

Land Use

- The land use along the southern section of Alemany is primarily residential, with some retail uses. No land use conflicts would be associated with the proposed changes.
- Parking removal is a concern for residents along some segments.

Other Departments or Agencies

- MUNI should be involved with the development of plans on Alemany Blvd. that may affect their service.

Next Steps

- Capacity analyses at key intersections associated with the travel lane reductions should be conducted by DPT.
- More precise identification and potential mitigation for parking loss should be identified.



2. Alemany at Sickles, looking northeast. The cross sections remains fairly consistent between San Jose and Rousseau.



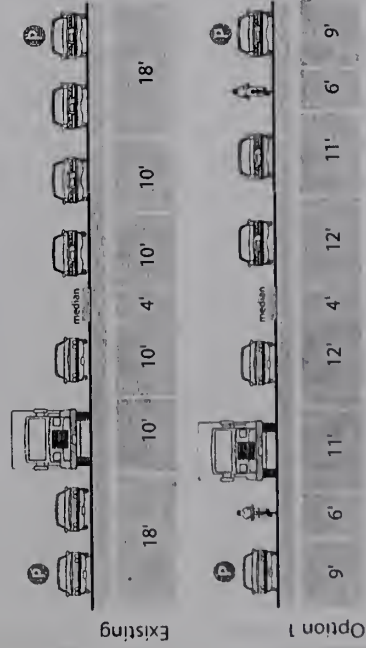
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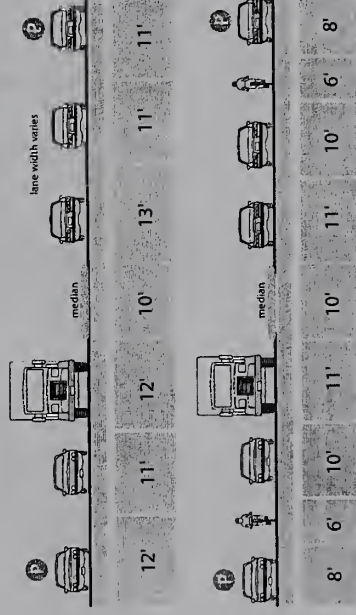


Street Cross-Section Typicals (looking northeast to Industrial)

Ⓐ San Jose to Rousseau



Ⓑ Rousseau to Couplet "Split"



SUMMARY SHEET

BAYSHORE BOULEVARD, US 101/PAUL TO CESAR CHAVEZ

Project Description

Bayshore Boulevard is a moderately-high volume arterial that parallels US 101 in southeastern San Francisco. Bicycle improvements to Bayshore Boulevard could provide an important north-south connection between Third Street and Cesar Chavez Street. The Third Street Light Rail Project will provide bike lanes to allow cyclists to continue to the southern limits of the city. These can be accessed from Bayshore via the existing bike lane/route on San Bruno.

In general, this portion of Bayshore Boulevard has two lanes of travel in each direction with parking on one or both sides of the street. Between Industrial and Cesar Chavez to the north, the roadway widens to include four travel lanes in each direction. Depending on the specific segment's land use and traffic patterns, a combination of parking lanes and/or travel lanes may be removed to provide the necessary width for bike lanes.

History/Background

Improvements on Bayshore and connections between Bayshore and other bike routes were recommended in the 1997 SF Bicycle Master Plan. The plan recommended a new path near the south side of Cesar Chavez and recommends a long-term solution of a bike overpass over Cesar Chavez beginning just west of the US 101 on-ramps to the Potrero Avenue crossover.

Design Segments

- San Bruno Avenue, Mansell Street to Paul Street: This segment of San Bruno Avenue is a narrow two lane roadway with one traffic lane in each direction. Implementation of bicycle lanes would require narrowing of the existing travel lanes. Potential transit impacts are a chief concern for this segment, requiring additional analysis and identification of potential mitigation measures to offset any identified increases in traffic congestion (see "Transit" discussion below).
- Paul to Fitzgerald: Currently, there are four travel lanes with on-street parking on both sides. Bike lanes could be added on both sides of the street by narrowing each travel lane by six inches and removing parking on the west side of the street. Elimination of travel lanes may be possible depending on the results of more detailed traffic analysis and potential impacts to transit. These transit impacts must be considered carefully, particularly given Muni plans to expand transit service on the Bayshore corridor (see "Transit" discussion below) Lane removal could enable implementation of bicycle lanes while preserving existing parking.
- Fitzgerald to Silver: Currently, there are four travel lanes with on-street parking on both sides. Bike lanes could be added on both sides of the street by removing parking on both sides of the street. *Transit discussion above under Paul to Fitzgerald applies to Fitzgerald to Silver.*
- Silver to Industrial: Currently, there are four travel lanes with restricted/limited parking on the north side. Bike lanes could be added on both sides of the street by narrowing the

southbound outside travel lane and remove parking on the east side of the street. *Transit discussion above under Paul to Fitzgerald applies to Silver to Industrial.*

- Industrial to US 101 Off-Ramp: This segment is seven travel lanes with parking on both sides. Bike lanes could be added on both sides of the street by eliminating one travel lane in each direction. This also leaves room for a buffer between parked cars and the bike lanes. A bike lane could also be possible by narrowing the existing lanes. A second option for this segment is to route the southbound bicycle lane along Phelps Street and not along this segment of Bayshore. The bicycle connection through the intersection of Phelps and Bayshore would require special consideration.
- US 101 Off-Ramps to Cesar Chavez: Currently, there are three travel lanes in the southbound direction and four lanes in the northbound direction. Bike lanes could be added on both sides of the street by narrowing lanes by removing parking on both sides of the street. Additional detailed analysis of this segment is required to ensure proper separation and merging of traffic streams in order to ensure bicyclist safety.

Capacity

- The specific impact of travel lane reductions to traffic operations on Bayshore will need to be studied further. Because Bayshore parallels US 101, traffic volumes will fluctuate based on the varying traffic conditions of US 101. **The DPT has acquired traffic count at key locations along Bayshore and at critical intersections. These counts will be integrated into the analysis.**

Transit

- Transit impacts are addressed by segment:
 - San Bruno, Mansell to Paul: San Bruno is a congested street, carrying several major bus lines. The 9,9X, 9AX and 29 bus lines run on San Bruno between Mansell and Paul and would turn across the bike lane at these intersections. Careful consideration needs to be given to avoid bus/bike conflicts at those intersections.
 - Paul to Fitzgerald: There are no bus lines running on this segment.
 - Fitzgerald to Silver: The 9X and 9AX bus lines run on this segment. The 54-Felton and the 44-O'Shaughnessy, frequently cross Bayshore Boulevard. Consideration must be given to intersection treatments at these locations.
 - Silver to Industrial: The Inbound 9, 9AX run on this segment and the Inbound 14X running on Alemany Boulevard frequently crosses Bayshore.
 - Industrial to US 101 Off Ramp: The 9, 9X, 9AX bus-lines, and the 23 and 24 bus-lines run on Bayshore Boulevard on this segment. Eliminating two travel lanes and implementation of a center turn lane and bicycle lanes may delay Muni buses. Additional analysis is required to determine that this alternative will not cause transit delays or another alternative is required that will not cause transit delays.
 - US 101 Off Ramp to Cesar Chavez: This is a complex traffic area requiring more detailed analysis to determine if bicyclists should be encouraged to use this area. A clear alternative must be developed demonstrating how bicyclists can be safely routed through the 101/Bayshore/Cesar Chavez maze. These safety concerns must be addressed to protect bicyclists and ensure that additional transit delays are not created.

Parking

- Based on the recommendations for the installation of bike lanes, on-street parking spaces will be removed at specific locations under some options. This will occur along sections with low-density industrial land uses where adequate off-street and side street parking exist. Also, some sections, such as the segment near Silver St., parking is already restricted to off-peak time periods. About ____ spaces will be removed. DPT has performed a parking supply inventory and approximated the current use at this location.

Trucks

- Bayshore Boulevard is used frequently by trucks and oversized vehicles.

Pedestrian Concerns

- The proposed bicycle improvement benefit pedestrians by decreasing the effective crossing distance across Bayshore. While the curb-to-curb distance will remain constant, the number of travel lanes will be reduced, so crossing at signalized or unprotected crosswalks will be simplified.
- On the other hand, the proposed improvements that call for the removal of parking may decrease the comfort of pedestrians along these sections of the sidewalk, due to the elimination of the buffer of parked cars.

Land Use

- The land use surrounding Bayshore is primarily industrial and Bayshore thus serves a good deal of truck traffic. Residential and other non-industrial land uses are also prevalent along the east side of Bayshore south of Silver Street. There are no known conflicts with the existing land uses.

Other Departments or Agencies

- No other departments or agencies will be affected the proposed changes to Bayshore Blvd.

Next Steps

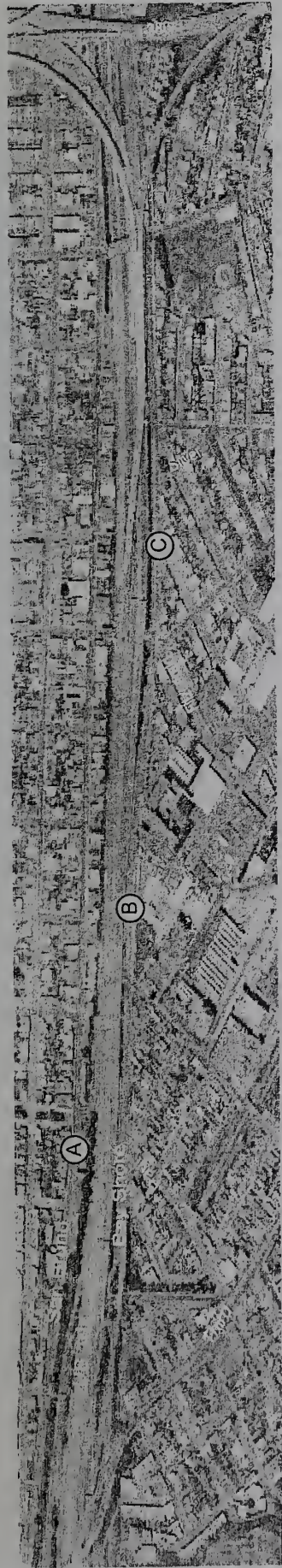
- Capacity analyses associated with the travel lane reductions should be conducted by DPT.
- Potential mitigation for parking loss should be identified based on the recently acquired counts.

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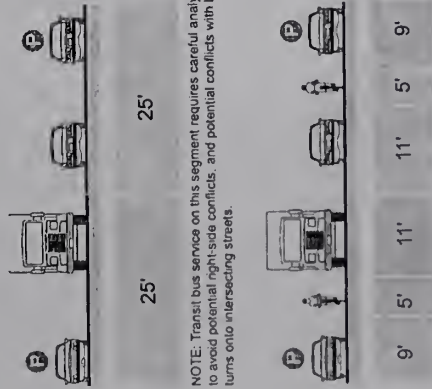


1. Bay Shore, looking north. This section of Bay Shore has 2 lanes of travel in each direction and on-street parking on the east side of the street.
2. San Bruno, looking north. This section of roadway parallels Bay Shore and provides a good bike connection between Bay Shore and 3rd Street to the south.
3. Bay Shore, near industrial, looking south. This section of Bay Shore has two travel lanes in each direction and no on-street parking.
4. Bay Shore at Helena, looking north. This section of Bay Shore has two travel lanes in each direction and no on-street parking.
5. Bay Shore near Oakdale, looking north. This section of Bay Shore has 6 travel lanes and parking on both sides of the street.
6. View of overhead lines on Bay Shore, looking south. These lines may need to be adjusted if roadway striping is modified.
7. Bay Shore approaching Cesar Chavez, looking north. In this section, Bay Shore becomes a one-way couplet, with four lanes in each direction.
8. The current bike route (25) on Bayshore connects to Cesar Chavez using a narrow sidewalk. The roadway crossings in this section are also challenging.



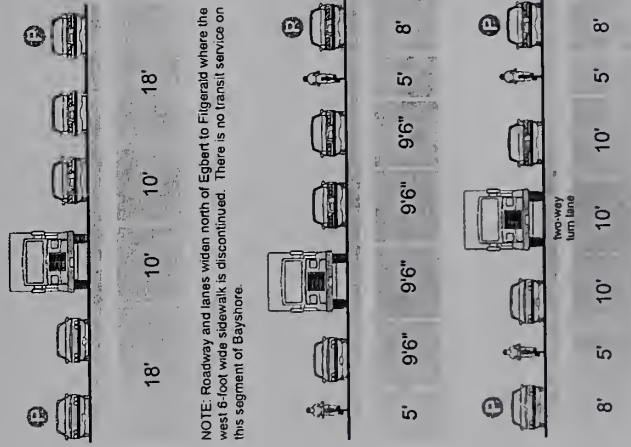
Street Cross-Section Typicals (looking north towards Cesar Chavez)

(A) SAN BRUNO, MANSELL TO PAUL



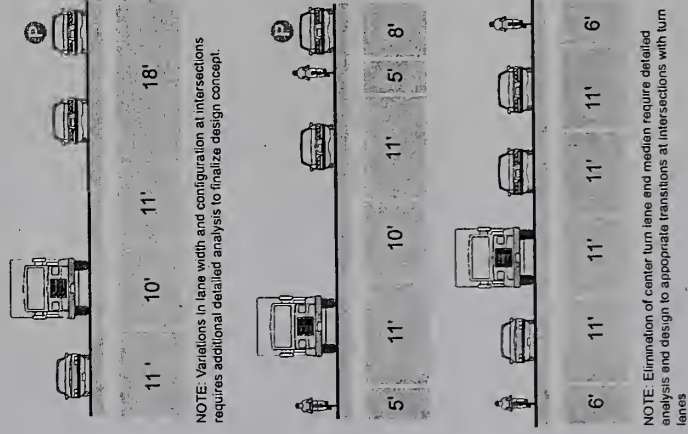
NOTE: Transit bus service on this segment requires careful analysis to avoid potential right-side conflicts, and potential conflicts with bus turns onto intersecting streets.

(B) PAUL TO EGBERT



NOTE: Roadway and lanes widen north of Egbert to Fitzgerald where the west 6-foot wide sidewalk is discontinued. There is no transit service on this segment of Bayshore.

(C) EGBERT TO SILVER



NOTE: Variations in lane width and configuration at intersections requires additional detailed analysis to finalize design concept.

NOTE: Elimination of center turn lane and median require detailed analysis and design to appropriate transitions at intersections with turn lanes

BAYSHORE BLVD
US101 (PAUL) TO CESAR CHAVEZ

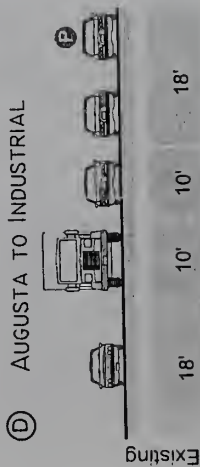
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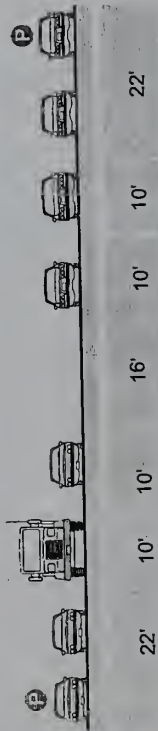
Street Cross-Sections (looking north towards Cesar Chavez)

Ⓕ AUGUSTA TO INDUSTRIAL



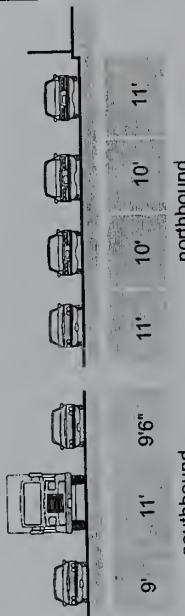
NOTE: Northbound Bayshore at Industrial widens to four ten-foot lanes, beginning 150 feet south of the intersection. This segment requires separate traffic analysis and design development.

Ⓖ INDUSTRIAL TO US101 OFF-RAMP



NOTE: Variations in lane widths will effect intersection transitions and bike lane widths for various segments. Lane widths vary along this segment one to two feet greater than the predominant dimensions shown.

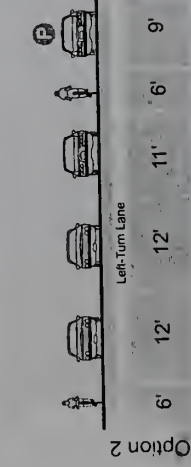
Ⓖ US101 OFF-RAMP TO CESAR CHAVEZ



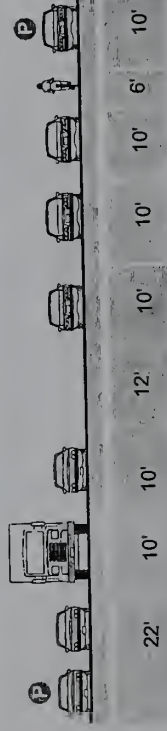
NOTE: Northbound Bayshore connection to Cesar Chavez requires sidewalk improvements to provide for bicyclist passage through the Jerrold Avenue intersection and to provide access to Mann Street



NOTE: Bike route is only in the northbound direction for this segment. Existing median is not modified in this option.



NOTE: Bike route is only in the northbound direction for this segment. Median narrowed in this option.



BROADWAY TUNNEL

VAN NESS AVENUE TO COLUMBUS AVENUE

SUMMARY SHEET

Project Description

Broadway Street is a moderate-volume roadway in the northeastern part of San Francisco. The Broadway Tunnel provides an important east-west connection from the Pacific Heights area and Chinatown and the Financial District. Currently, experienced cyclists follow the 210 Route using the narrow outside motor vehicle lanes in the tunnel. Eastbound bicyclists use the south bore along with eastbound vehicle traffic, and westbound bicyclists use the north bore along with westbound vehicle traffic. Bicyclists in both directions are exposed to high-speed traffic and limited visibility. Although cyclists are currently prohibited from riding on the tunnel's sidewalks by City legislation, the majority of bicyclists that use the tunnel ride on the existing sidewalks. Route 10 provides a circuitous and hilly route over the tunnel following Pacific Avenue. Under this proposed project, Route 10 would continue to serve less experienced bicyclists or bicyclists who do not wish to ride through the tunnel.

History/Background

Routes 10 and 210 are discussed in detail in the 1997 Bike Plan. Recommendations for improvements to the Broadway Tunnel in the 1997 Bike Plan included: (a) design the sidewalk in the westbound tunnel for bicyclists and advise pedestrians to use the sidewalk in the eastbound tunnel, (b) widen the westbound tunnel sidewalk by relocating the rail to the lower ledge, thereby increasing usable width, and also rebuilding the lower ledge adjacent to the sidewalk to add this width, (c) provide adequate shy distance for vehicles from the relocated rail by re-striping traffic lanes to 10' and striping an edge line to keep cars away from the relocated rail, (d) sign eastbound sidewalk (in the south tunnel) for pedestrians only, and (e) install a push button activated flashing yellow beacon with a sign that reads "BIKES IN TUNNEL WHEN LIGHTS FLASHING." DPT and DPW have made preliminary investigations of the costs and engineering requirements associated with widening the existing sidewalks and changing legislation to allow for bicycle use of sidewalks. The fire hydrants on the sidewalk in both tunnel bores have been replaced by the standpipes in the walls below the sidewalks, as recommended in the 1997 Bicycle Plan. This has increased the clear sidewalk width by a few inches at each former fire hydrant location.

Design Segments

Option 1 Design:

Extinguishable message signs¹ (EMSs) are recommended for the westbound and eastbound approach, the entry face of each tunnel, and at key locations within the tunnel where drivers'

¹ EMSs are signs that are internally illuminated and have an on- and off- condition. These signs typically communicate a very short message that is either off most of the time or on most of the time, depending on the condition that is described. For this case, the conditions that is described is brief and temporary, therefore, the sign will be off, and non-visible when not activated.

perspective view is changed due to changing tunnel roadway geometry. This extinguishable signage must be accompanied by appropriate activation technology readily accessible to bicyclists in a protected location on the edge of the roadway along the approach to the tunnel entry. Activation technologies include push-button activation, microwave detection, and other sensor based activators. Push button activation is recommended to ensure that bicyclists are aware of high-speed traffic and limited separation when entering the tunnel. The extinguishable message sign should read, "BIKES IN TUNNEL," with a placard sign mounted below reading "WHEN FLASHING." The signage assembly should include a yellow flashing beacon mounted at top. This configuration is shown as Option 1 on the Concept Design Sheet. This recommendation is for the eastbound (south tunnel) direction only. Westbound bicyclists would be directed to use the sidewalk in the north bore due to the steep uphill grade in the westbound direction, and the significant speed differential between vehicles and bicyclists traveling uphill. This would require repeal of the legislation prohibiting bicycle use of the westbound sidewalk.

Option 2 Design:

Five inches of usable sidewalk can be gained by relocating the existing rail to the lower ledge in the existing curb, sidewalk configuration. This rail relocation would facilitate passage of bicyclists and pedestrians in the tunnel. A change in legislation allowing bicyclist's use of the existing sidewalks is required to accompany this design option for the north bore, providing for westbound bicyclists. This treatment is recommended for the north bore.

This option would require crossings west and east of the existing tunnel entrances to allow bicyclists to access the south tunnel from various origin and destination points north and south of the Broadway corridor.

Option 3 Design:

16 inches of usable sidewalk can be gained by reconstructing the ledge adjacent to the sidewalk so that it is part of the sidewalk. This would not change the location of the existing curb face. The resulting sidewalk would be 5'-3", less the width required for rail placement. A change in legislation allowing bicyclist's use of the reconstructed sidewalks is required to accompany this design option for both directions.

This treatment could be used in the south bore (westbound) only along with signage recommending that pedestrians use the north bore (eastbound). This option would require that cyclists cross Broadway west and east of the existing tunnel entrances to allow them to access the south tunnel sidewalk from various origin and destination points north and south of the Broadway corridor.

Option 4 Design:

Lane narrowing to create two 10'-6" traffic lanes would allow for reconstruction of the sidewalk, curb and drainage inlet configuration to create an approximately 6' sidewalk. A change in legislation allowing bicyclist use of the reconstructed sidewalks is required to accompany this design option for both directions.

This treatment could be used in the south bore (westbound) only along with signage recommending that pedestrians use the north bore (eastbound). This option would require that cyclists cross Broadway west and east of the existing tunnel entrances to allow them to access the

south tunnel sidewalk from various origin and destination points north and south of the Broadway corridor.

Capacity

- Capacity will not be affected since travel lanes will not need to be removed.

Parking

- Parking will not be affected.

Transit

- Muni service on Broadway Street and intersecting streets will not be affected by the proposed changes.

Pedestrian Concerns

- The proposed bicycle improvements within the Broadway Tunnel will benefit pedestrians by providing more space for both bicyclists and pedestrians. Currently, both bicyclists and pedestrians share the narrow (3'-6") sidewalks in the Broadway Tunnel.
- Legislation change is required to allow bicyclists to use the existing sidewalk. Regardless of the design option selected, it is recommended to change the legislation prohibiting bicyclists on the sidewalks and to provide signage alerting bicyclists and pedestrians to expect one another and to exercise caution and courtesy when negotiating the narrow sidewalk. The current prohibition is ineffective, evidenced by the fact that most bicyclists using the tunnel use the sidewalk rather than the roadway.
- Options 2,3, & 4 advise pedestrians to use only the south bore (eastbound)

Land Use

- The majority of the surrounding area is residential. No changes in land use designations would be necessary.

Next Steps

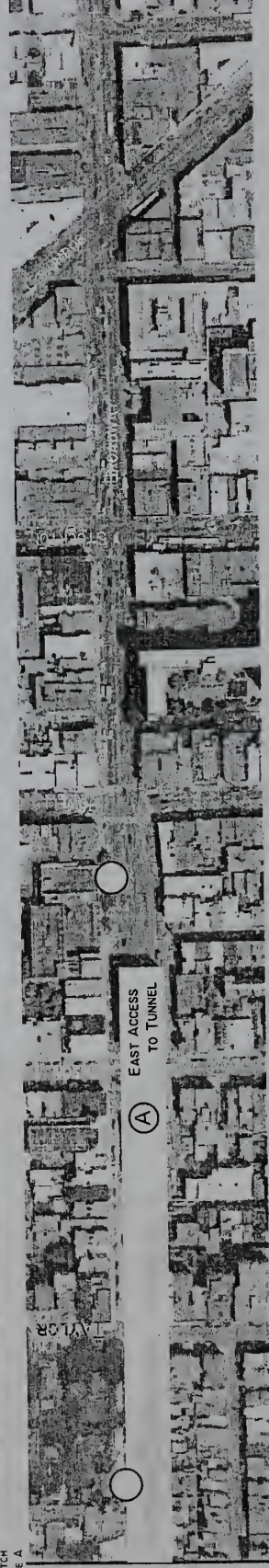
- Drainage in the tunnel should be researched and the feasibility of widening the sidewalks should be explored.
- Legislate allowances for sidewalk riding for westbound direction in north bore of tunnel.
- Finalize design for bicycle actuation of proposed signage, if proposed.
- Develop PS&E.

MATCH LINE A



WESTERN PROJECT AREA BOUNDARY

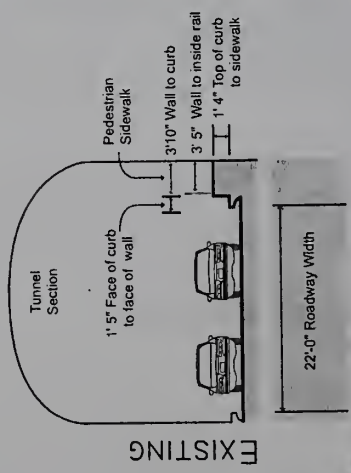
MATCH LINE A



EASTERN PROJECT AREA BOUNDARY

STREET CROSS-SECTIONS

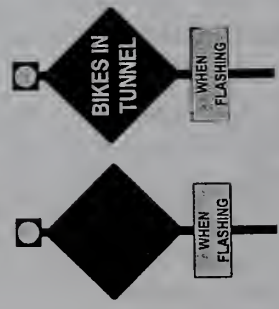
A NORTH BORE (FACING WEST)



○ Proposed extinguishable sign location

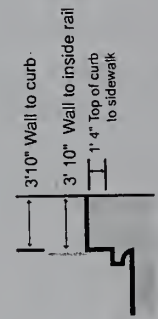
OPTION 1

Extinguishable signage on approach and in tunnel. Recommended locations indicated above on aerial with white circle.
(See Project Summary for Discussion)



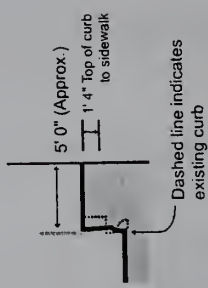
OPTION 2

Relocate rail to outside face of the existing elevated sidewalk



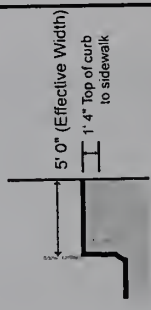
OPTION 3

Modify curb drainage inlet to increase usable sidewalk width



OPTION 4

Narrow roadway to two 10' 6" lanes and modify curb drainage inlet to increase usable sidewalk width



BROADWAY TUNNEL

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SUMMARY SHEET

CESAR CHAVEZ STREET, SANCHEZ TO I-280

Project Description

Cesar Chavez Street is a moderately-high volume arterial in central-eastern San Francisco. Bicycle improvements to Cesar Chavez Street would provide an important east-west connection, linking Noe Valley, Diamond Heights with the Mission, and Potrero Hill. The project would also provide a key connection to the Bayview and other southeastern neighborhoods.

Most of Cesar Chavez has either two or three lanes of travel in each direction with parking on both sides of the street. Depending on the specific segment's land use and traffic patterns, it may be necessary to remove either parking lanes or travel lanes to provide the necessary width for bike lanes.

An alternative to providing striped bike lanes on Cesar Chavez would be to designate a lower-volume, parallel roadway as a "Bike Boulevard." (For representative detail, see the San Francisco Bicycle Plan Update Supplemental Design Guidelines, Treatment 12, page 19. This figure is attached to this project summary.) The bike boulevard treatment could include traffic calming treatments such as traffic circles and diverters to slow vehicular speeds and discourage cut-through automobile traffic. In addition, stop signs could be removed on the boulevard or re-oriented towards intersecting streets to allow continuous movement by bicyclists on the bike boulevard. Based on preliminary observations, either 25th Street or 26th Street could be designated as a bike boulevard between Sanchez and Hampshire. Of the two, 26th Street may be preferable due to the fact that it is less steep between Dolores and Fair Oaks and that it has two fewer stop signs.

History/Background

The 1997 Bicycle Plan recommended removal of the concrete median and relocation of the median street lights in order to re-stripe the street with wide curb lanes between Potrero Avenue and Guerrero Street. This was not pursued due to the high cost and minimal benefits. However, a one-block, part time (Monday to Friday, 7AM to 6PM, and Saturday/Sunday, 9 AM to 6 PM) eastbound bike lane was striped between York and Hampshire Streets. A westbound bike lane between Hampshire and Bryant Streets was proposed but not implemented due to neighborhood concern about parking loss. Existing bicycle lanes on Cesar Chavez between York Street and Hampshire Street are regularly blocked by parked vehicles, requiring design modification or increased enforcement of parking violations.

Two other planning efforts, the North Bernal Heights Traffic Calming Plan and the SE Mission Pedestrian Safety Plan should be considered throughout the Cesar Chavez Street bicycle planning process. Specifically, spillover traffic from any congestion on Cesar Chavez Street would exacerbate existing cut-through traffic issues that the North Bernal Heights Traffic Calming Plan is seeking to mitigate.

Design Segments

- Sanchez to Guerrero: This section could be signed as a bike route and possibly stenciled with the new shared-lane pavement markings. Bike lanes are not recommended for this section because the low volume and the lack of available width.
- Guerrero to US 101: To provide for bike lanes, a travel lane would need to be removed in each direction in this section. Currently, there are three travel lanes in each direction.
- If the median is maintained for this segment, vehicle left turn pockets in conjunction with pedestrian crossing improvements should be considered at key intersection on this segment where travel lane removal is required for bicycle lane implementation. Unsignalized intersections should be given priority for this treatment. This option suggested by SFBC requires additional explanation.
- US 101 to I-280: To provide for bike lanes, the on-street parking on the north side of the street (westbound) could be removed. Colored bike lane treatments across the highway on- and off-ramps may also be used to help highlight the presence of bicycles across these high-conflict areas. This section would make use of the asphalt path underneath US 101. Other crossing treatments would be needed to allow bicyclists to cross safely.

Capacity

- The impact of travel lane reductions to traffic operations on Cesar Chavez, between Guerrero and US 101 will need to be studied further. Capacity issues are important to maintaining MUNI operations and preventing spillover traffic to neighborhood streets.
- **New traffic counts will be acquired by DPT and will be integrated into the analysis.**

Transit

- MUNI operates bus service on Cesar Chavez. Bus service may be impacted by the implementation of bicycle lanes due to potential bus/bike conflicts and reduction of capacity. Current service includes:
 - Route 19 from Evans Street to Connecticut Street with PM peak service frequency at 10 minutes
 - Route 27 from Bryant Street to Mission Street with PM peak service at 12 minutes
 - Route 12 from South Van Ness Avenue to Mission Street with PM peak service at 10 minutes
- Additional future MUNI bus service may be added on Cesar Chavez between Guerrero and Third Streets.
- MUNI service exists on 26th Street eastbound between Valencia Street and Folsom Street.

Parking

- Based on the recommendations for the installation of bike lanes, on-street parking spaces will be removed on the north side of the street between US101 and I-280. This will occur along sections with low-density industrial land uses where adequate off-street and side street parking exist. About 76 spaces will be removed along the northside of the street, 25 of which were occupied on a weekday afternoon. All occupied spaces were between Connecticut and Mississippi Streets. No spaces were occupied between Connecticut and Kansas Streets.

Trucks

- Cesar Chavez has a relatively high volume of trucks and oversized vehicles. The Transportation Element of the General Plan designates Cesar Chavez as a "route with significant truck traffic," between 3rd and US 101.

Pedestrian Concerns

- The proposed bicycle improvement benefit pedestrians by decreasing the effective crossing distance across Cesar Chavez. While the curb-to-curb distance will remain constant, the number of travel lanes will be reduced, so crossing at signalized or unprotected crosswalks will be simplified.
- On the other hand, the proposed improvements that call for the removal of parking between US101 and I-280 may decrease the comfort of pedestrians along these sections of the sidewalk, due to the elimination of the buffer of parked cars.
- Currently, through the SE Mission Pedestrian Safety Plan, the Department of Parking and Traffic Livable Streets program is conducting planning for neighborhood traffic calming and potential pedestrian crossing and intersection improvements on Cesar Chavez.
- A four or five foot wide pedestrian refuge could be incorporated into Option 2 if travel lanes and/or parking lanes are narrowed.

Land Use

- The land use along most of Cesar Chavez is primarily residential, with some retail uses. No land use conflicts would be associated with the proposed changes.

Other Departments or Agencies

- MUNI should be involved with the development of plans on Cesar Chavez Street that may affect their service.

Next Steps

- Capacity analyses associated with the travel lane reductions should be conducted by DPT. This will incorporate newly acquired traffic counts.
- More precise identification and potential mitigation for parking loss should be identified.
- Cost estimates for removing any or all of the median need to be determined. Note that the SE Mission Pedestrian Safety Plan estimates that this cost would be greater than one million dollars.
- When considering any proposed changes, consult with the North Bernal Heights Traffic Calming Plan and the SE Mission Pedestrian Safety Plan.

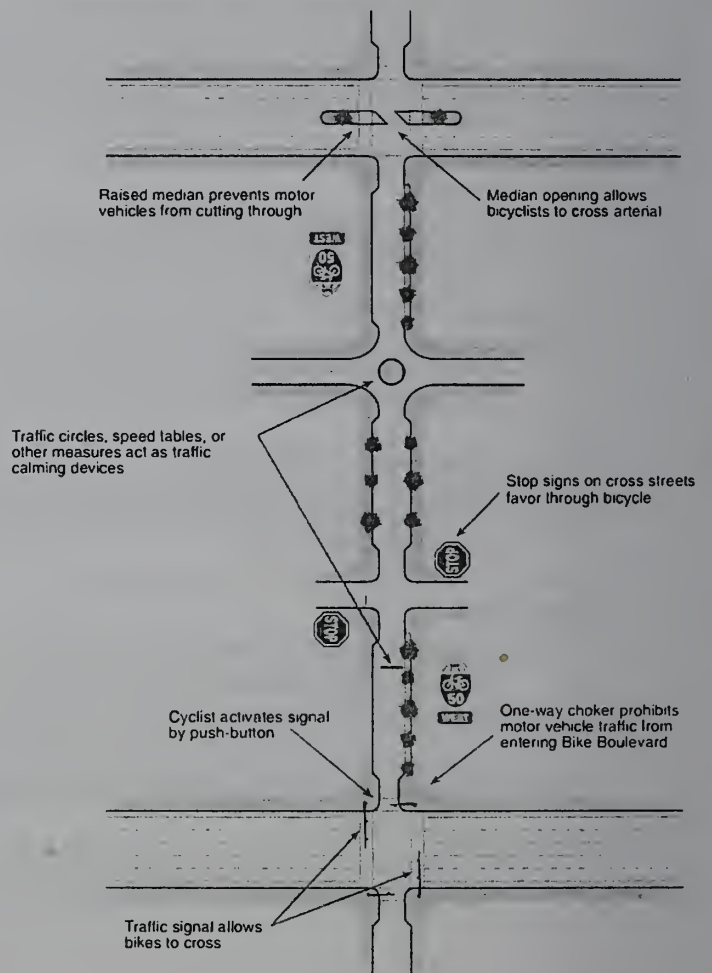
BICYCLE BOULEVARD

The bicycle boulevard treatment is typically a lower volume street with traffic calming treatments that parallels a higher volume arterial. Traffic calming typically includes a set of improvements to slow traffic and prevent cut-through traffic such as: traffic circles, chokers, and medians. In addition, stop signs favor bicyclists by stopping perpendicular traffic. Push-buttons activate traffic signals to allow safe crossings of higher volume roadways.

POT

- volume streets
- on streets
- parallel
- rials
- Allows access to key destinations
- Provides safe arterial street crossing

GRAPHIC



NOTES

20 mph speed limits should be considered.

SELECTED LOCATIONS WHERE TREATMENT IS USED

- Portland, OR
- Palo Alto, CA
- Berkeley, CA
- Vancouver, BC



1. 25th at Sanchez, looking east. 25th is a residential street that parallels Cesar Chavez and could be used as a bicycle boulevard.

2. 26th at Church, looking east. 26th may also be used as a bicycle boulevard. The segment between Sanchez and Harrison has 2 fewer stop signs and less grade changes than 25th.

3. 26th at Mission, looking east. 777 Castro and Clipper 777.

4. 25th at Treat, looking east. This segment is primarily residential with a low traffic volume.

5. Cesar Chavez has 4 lanes of travel with a central median and parking on both sides. This segment also has a lot of intersecting driveways.

6. Cesar Chavez at Harrison, looking east. This section of Cesar Chavez has 4 lanes of traffic and parking on both sides.

7. Cesar Chavez at Evans, looking west. This section of Cesar Chavez has 4 lanes of traffic and parking on both sides.

8. Cesar Chavez at Indiana, looking west. This section of Cesar Chavez has striped bike lanes between Pennsylvania and Third Street.



Cesar Chavez Sanchez to I-280



This draft diagram is designed for public input and discussion purposes. This is a representative diagram and is not based on actual survey data. All information presented in this diagram is subject to modification.

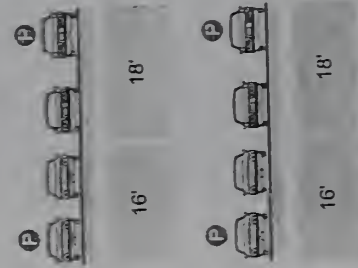
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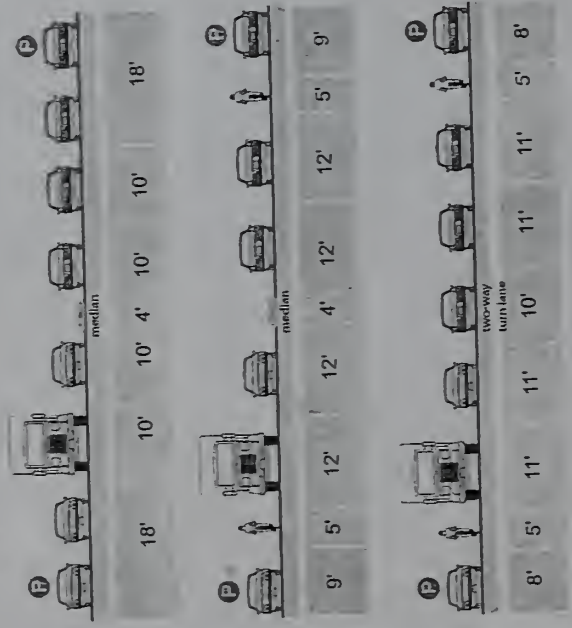
Street Cross-Section Typicals (looking east towards Third Street)

(A) Sanchez to Guerrero

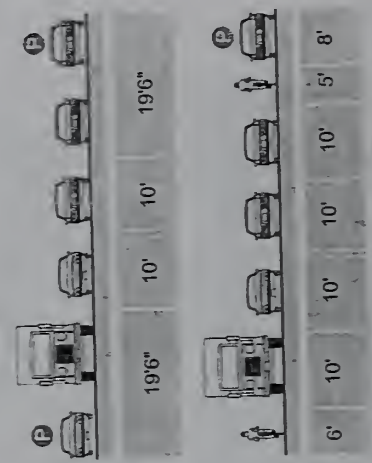


Sign and tree as a shared roadway

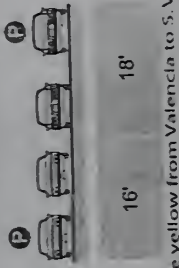
(B) Guerrero to US 101



(C) US101 (Kansas) to I-280 (Mississippi)



Neighborhood Option (using 26th Street)



Double yellow from Valencia to S. Van Ness

This draft diagram is designed for public input and discussion purposes. This is a representative diagram and is not based on actual survey data. All information presented in this diagram is subject to modification.

Cesar Chavez
Sanchez to I-280

DRAFT 10/31 /03



FELL STREET/MASONIC AVENUE INTERSECTION

SUMMARY SHEET OUTLINE

General Project Description

The existing Golden Gate Park Panhandle bike path (administered by the San Francisco Recreation and Park Department) crosses Masonic Avenue at the south side of the Masonic Avenue and Fell Street intersection. This is a high volume bicycle commuter and recreation path and a high volume roadway intersection.

The existing standard parallel-striped crosswalk on Masonic Avenue, on the south side of the Fell Street /Masonic Avenue intersection, is set back approximately 10 feet from the existing intersection corners. This condition reduces visibility for both motorists and bicyclists. Westbound motorists turning left from Fell Street onto southbound Masonic Avenue sometimes cannot adequately see bicyclists and pedestrians using the crosswalk. Westbound bicyclists are particularly difficult for motorists to see, as they can be visually blocked by trees, utility poles and parked vehicles until they have entered into the intersection. Bicyclists cannot easily see approaching left-turning vehicles as they are leaving the path and entering the intersection crosswalk.

The proposed crossing improvement addresses both the visibility and vehicle speeds. Three design options are provided, including: Short-Term, Long-Term 1 and Long-Term 2. The three design conditions are summarized below under Design Segments.

History/Background

This pathway crossing is a recognized concern due to the high volumes of commuter and recreational bicyclists that use the crossing, and due to the high volumes of vehicle traffic using the Fell Street /Oak Street couplet, as well as Masonic Avenue for cross-city travel.

Recent improvements to the path and the crossing include widening, repaving, and lighting the path; establishing a 10 foot red zone along the south side Fell Street approach to Masonic Avenue to improve sight lines, installation of signs directing left turning vehicles to yield to pedestrians and bicyclists, the installation of pedestrian countdown signals, and the construction of wide curb ramps.

A longer No Parking/red zone along the Fell Street approach has been considered but concerns of illegal parking in a long, seemingly unneeded red zone led to the implementation of a 10 foot zone. A longer zone would improve sightlines if it can be kept clear of illegally parked vehicles, either with enforcement or with physical design elements such as a curb extension.

Moving the path crossing closer to the intersection was also considered during the recent path work, but the benefits of doing so without other improvements such as the curb extensions proved to be minimal. Also, a signal pole and a catch basin located in the path of such a crossing reduced the cost benefit ratio to a point where the realignment was not included with the path work.

Design Segments

Option A:

The proposed short-term design relies on the following design features:

- An expanded parking prohibition on Fell Street, extending the No Parking zone from the southeast corner approximately 60 feet east to increase visibility of the Panhandle Path from westbound Fell Street (this would result in the loss of approximately three on-street parking spaces).
- Advance Walk phase to allow bicyclists and pedestrians to get a “head start” on motor vehicles when the signal changes from red to green. Left turning vehicles from Fell Street onto Masonic Avenue will be held for extra seconds to allow path users to establish themselves in the crosswalk.
- High-visibility “ladder” crosswalk will provide higher visibility than existing parallel stripe crosswalk at current crosswalk location.
- Relocated stop limit line for northbound Masonic Avenue to keep vehicles out of the crosswalk and increase safe operating space for bicyclists and pedestrians.
- Installation of unique signage at appropriate height and orientation to ensure visibility to motorists and limit visibility to trail users (to the extent possible). The graphic and/or textual message should focus on encouraging motorists to yield to pedestrians and bicyclists in the crosswalk. Options for unique signage specific to this application are included in the Supplemental Design Guidelines for the Bicycle Plan Update.
- Optional “safe-hit” posts may be installed on the centerline stripe of Masonic Avenue immediately north of the crosswalk stripe in order to encourage left turning vehicles from Fell Street to make slower, tighter radius turns (this optional feature may have a short life-span due to limited durability of safe-hit posts).

Option B:

This proposed design relies on the following design features:

- Curb extensions on both sides of Masonic Avenue on the south side of Fell Street in order to create a tighter turning radius for vehicles and effectively slow turning speeds. This also will create more space for the path to be realigned closer to the intersection.
- An expanded parking prohibition on Fell Street, extending the No Parking zone from the southeast corner approximately 60 feet east to increase visibility of the Panhandle path from westbound Fell Street (this would result in the loss of approximately three on-street parking spaces).
- Advance Walk phase to allow bicyclists and pedestrians to get a “head start” on motor vehicles when the signal changes from red to green. Left turning vehicles from Fell Street onto Masonic Avenue will be held for extra seconds to allow path users to cross more safely.
- Relocated high-visibility “ladder” crosswalk will provide higher visibility than existing parallel stripe crosswalk.
- Relocated stop limit line for northbound Masonic Avenue to keep vehicles out of the crosswalk and increase safe operating space for bicyclists and pedestrians.
- Slight reorientation of path to deliver path users directly to the intersection and new cross-walk to ensure that they are crossing in the most visible location

- Installation of unique signage at appropriate height and orientation to ensure visibility to motorists and limit visibility to trail users (to the extent possible). The graphic and/or textual message should focus on encouraging motorists to yield to pedestrians and bicyclists in the crosswalk. Options for unique signage specific to this application are included in the Supplemental Design Guidelines for the Bicycle Plan Update.
- Optional “safe-hit” posts may be installed on the centerline stripe of Masonic Avenue immediately north of the crosswalk stripe in order to encourage left turning vehicles from Fell Street to make slower, tighter radius turns (this optional feature may have a short life-span due to limited durability of safe-hit posts).

Option C (Dedicated Left-Turn Signal Phase):

A third option for this location is to re-phase and re-time the existing signalization at Fell Street/Masonic Avenue to provide for a dedicated left-turn phase and a protected bike/pedestrian crossing phase. Left-turning vehicles from westbound Fell Street onto southbound Masonic Avenue would be held (with a red turn arrow) during the dedicated bicycle/pedestrian phase. After this phase, left-turning traffic would either receive a green arrow, or a flashing yellow arrow. Under the green arrow scheme, vehicles would have the right-of-way. Under the flashing yellow arrow condition, motorists would be informed to yield to bicyclists and pedestrians using the crosswalk. This long-term feature includes the following:

- Installation of exclusive left turn lane if traffic volumes on westbound Fell Street.
- Modify signal phasing and timing to provide left-turn arrow for westbound Fell Street and protected bicycle and pedestrian phasing across the intersection’s southern leg.
- Revise Fell Street’s lane markings and transitions upstream and downstream of Masonic Avenue.
- No parking removal is required for this option.
- Optional “safe-hit” posts may be installed on the centerline stripe of Masonic Avenue immediately north of the crosswalk stripe in order to encourage left turning vehicles from Fell Street to make slower, tighter radius turns (this optional feature may have a short life-span due to limited durability of safe-hit posts).

Capacity

Option A

- Assuming pedestrians and bicyclists are given a three-second “head-start” by shortening the amount of green time on Fell Street or Masonic Avenue by three seconds, westbound motorist delays would increase by an average of two seconds per vehicle and queue lengths would increase by one to two cars per lane. Westbound vehicle progression would be affected and signal timing along the Fell Street corridor should be evaluated to minimize disruption. The intersection would continue to operate at LOS B conditions.

Option B

- Assuming pedestrians and bicyclists are given a three-second “head-start” by shortening the amount of green time on Fell Street or Masonic Avenue by three seconds, westbound motorist delays would increase by an average of two seconds per vehicle and queue lengths would increase by one to two cars per lane. Westbound vehicle progression would be affected and signal timing along the Fell Street corridor should be

evaluated to minimize disruption. The intersection would continue to operate at LOS B conditions.

Option C

- Under this option, Fell Street's through lanes would be reduced from four to three. During the PM peak hour, over 1,800 vehicles use these lanes. This option would degrade the intersection's level-of-service and would require lane striping to the east of the intersection to merge westbound through traffic into the second lane. After traveling through the intersection, some westbound traffic would move into the first lane. The frequent lane-changing could result in an increase in vehicle collisions. Therefore, if this option were to be further pursued, it is recommended that a large segment of Fell Street be converted to three through lanes for lane balance purposes. This may be a feasible solution after the Octavia Boulevard project has been constructed.

This option requires modeling and careful consideration to determine how the progression on both Fell Street and Oak Street may be effected.

Although the option would provide protected phasing for pedestrians and bicycles, the phase duration would be about one-third of the duration less than it currently is.

Transit

Option A

- There are two weekday evening express lines on Fell Street, the 16AX and the 16BX. On Masonic Avenue there is the 43 Masonic Avenue. Any changes to signal timing or capacity must take Muni operations into account.

Option B

- There are two weekday evening express lines on Fell Street, the 16AX and the 16BX. On Masonic Avenue there is the 43 Masonic Avenue. Any changes to signal timing or capacity must take Muni operations into account.

Option C

- There are two weekday evening express lines on Fell Street, the 16AX and the 16BX. On Masonic Avenue there is the 43 Masonic Avenue. Any changes to signal timing or capacity must take Muni operations into account.

Parking

Option A

- Parking utilization on Fell Street is extremely high. This option would result in the loss of approximately sixty lineal feet of parking, or the equivalent of about three vehicles.

Option B

- Parking utilization on Fell Street is extremely high. This option would result in the loss of approximately sixty lineal feet of parking, or the equivalent of about three vehicles.

Option C

- No Parking Loss

Trucks

Option A

- There are no changes to intersection geometry with this proposal, except for a setback limit line that would improve Fell Street to southbound Masonic Avenue turning movements.

Option B

- Modifications to turning geometry and lane widths must take into account left turning trucks from westbound Fell Street to Masonic Avenue southbound.

Option C

- Modifications to turning geometry and lane widths must take into account left turning trucks from westbound Fell Street to Masonic Avenue southbound.

Pedestrian Concerns

Option A

- Pedestrian safety would be improved with the use of a “head start” for path users. Pedestrians and bicyclists must exercise appropriate yield to one another when using the crosswalk. Motor vehicles are required to yield to pedestrians. Unique signage is required for signal controlled multi-use path crossings. This signage is identified in the San Francisco Bicycle Plan Update Supplemental Design Guideline.

Option B

- Pedestrian safety would be improved with the use of a “head start” for path users. Pedestrians and bicyclists must exercise appropriate yield to one another as well as to motor vehicles. Unique signage is required for signal controlled multi-use path crossings. This signage is identified in the San Francisco Bicycle Plan Update Supplemental Design Guideline.

Option C

- Pedestrian safety would be improved with a dedicated phase for path users. However, crossing time for path users in such a proposal significantly cuts the length of the crossing phase. Pedestrians and bicyclists must exercise appropriate yield to one another as well as to motor vehicles. Unique signage is required for signal controlled multi-use path crossings. This signage is identified in the San Francisco Bicycle Plan Update Supplemental Design Guideline.

Land Use

- Surrounding land use is park and high density residential, with high demand for on-street parking due to local shortage in off-street parking. Crossing improvement is a priority due to prevalence of the Panhandle Multi-Use Path as a commuter and recreational corridor for bicyclists, and popular pedestrian path.

Other Departments or Agencies

- All project alternatives require coordination with San Francisco Recreation and Park Department.

Preliminary Cost Estimate

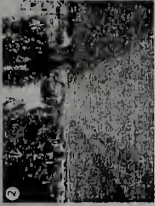
- Option A: \$8,000.
- Option B: \$50,000.
- Option C: \$100,000.

Next Steps

- To be determined.



1. View of existing crosswalk across Masonic (looking east). Crosswalk connects Panhandle multi-use path and serves numerous bicyclists and pedestrians.



2. Westbound bicyclist's view of Masonic crossing. Note that bicyclist's view of westbound vehicle traffic on Fell is obstructed by parked vehicles.



3. Westbound driver's view of Masonic crossing. Motorists view of Panhandle path users is often obstructed by parked vehicles.



4. Westbound vehicles turning left from Fell onto Masonic. Note sharp turn being made by vehicle. Also note that crosswalk slope is offset from Fell by about 10 feet.



5. Westbound vehicles turning left from Fell onto Masonic. Due to congestion at the Masonic/Oak intersection, Masonic traffic backs up through the Masonic/Fell intersection.



6. Southbound Masonic vehicles do not clear the Fell intersection during the green light. Bicyclists and pedestrians must weave across encroached vehicles.



7. Motorists waiting for vehicle queue to progress along southbound Masonic block the crosswalk and impede the crosswalk.



8. Some northbound motorists stop within crosswalk during the red light instead of behind the crosswalk. This creates an unsafe condition for crosswalk users and limits sight distance.



Fell Street/Masonic Avenue Intersection

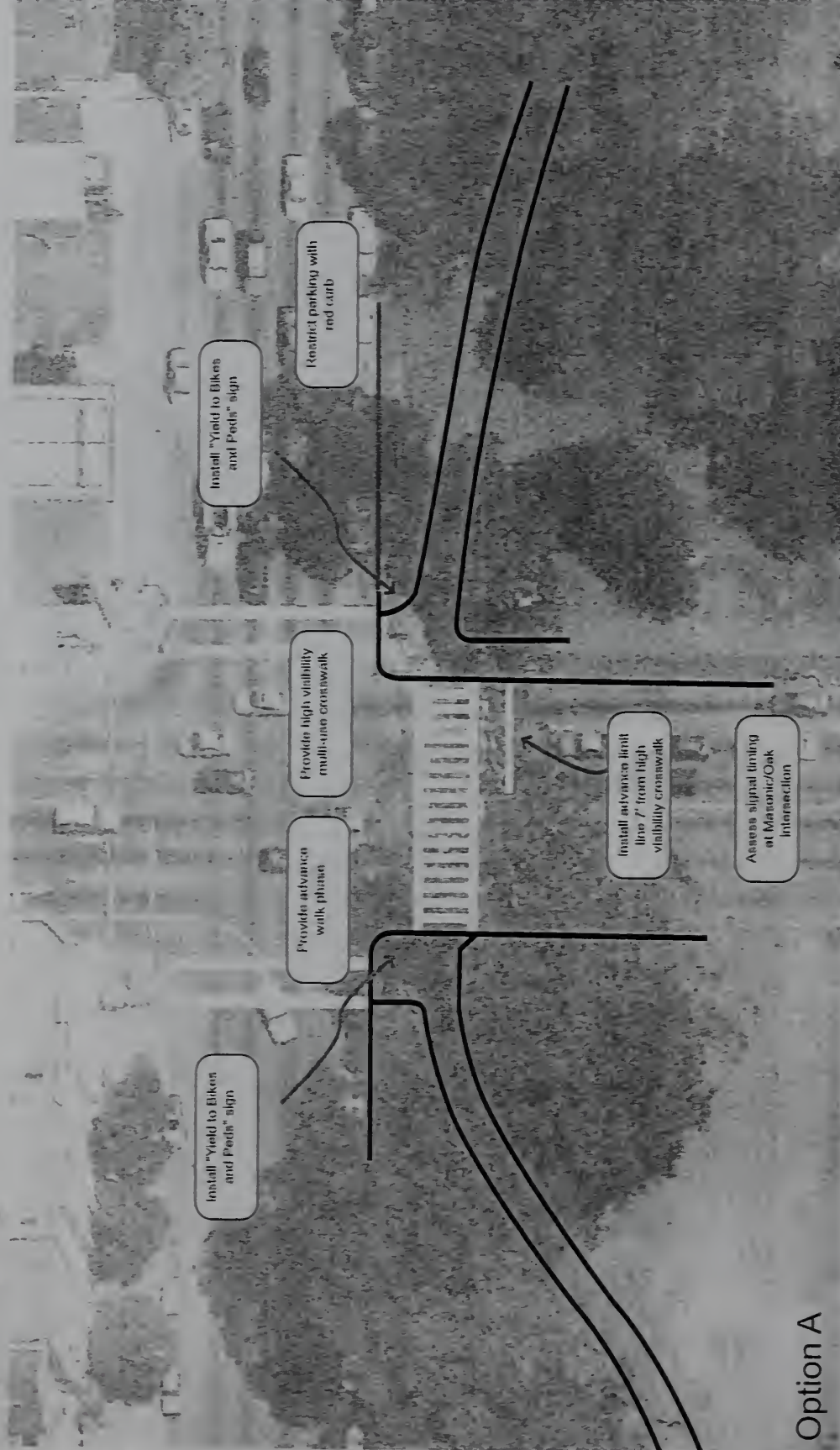
Existing Conditions

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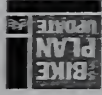
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Fell Street/Masonic Avenue Intersection

Design Concept



Option A



FELL MASONIC DESIGN CONCEPT SHEET 1 OF 3
SAN FRANCISCO BICYCLE PLAN UPDATE
PRELIMINARY ENGINEERING PRIORITY PROJECT SHEETS

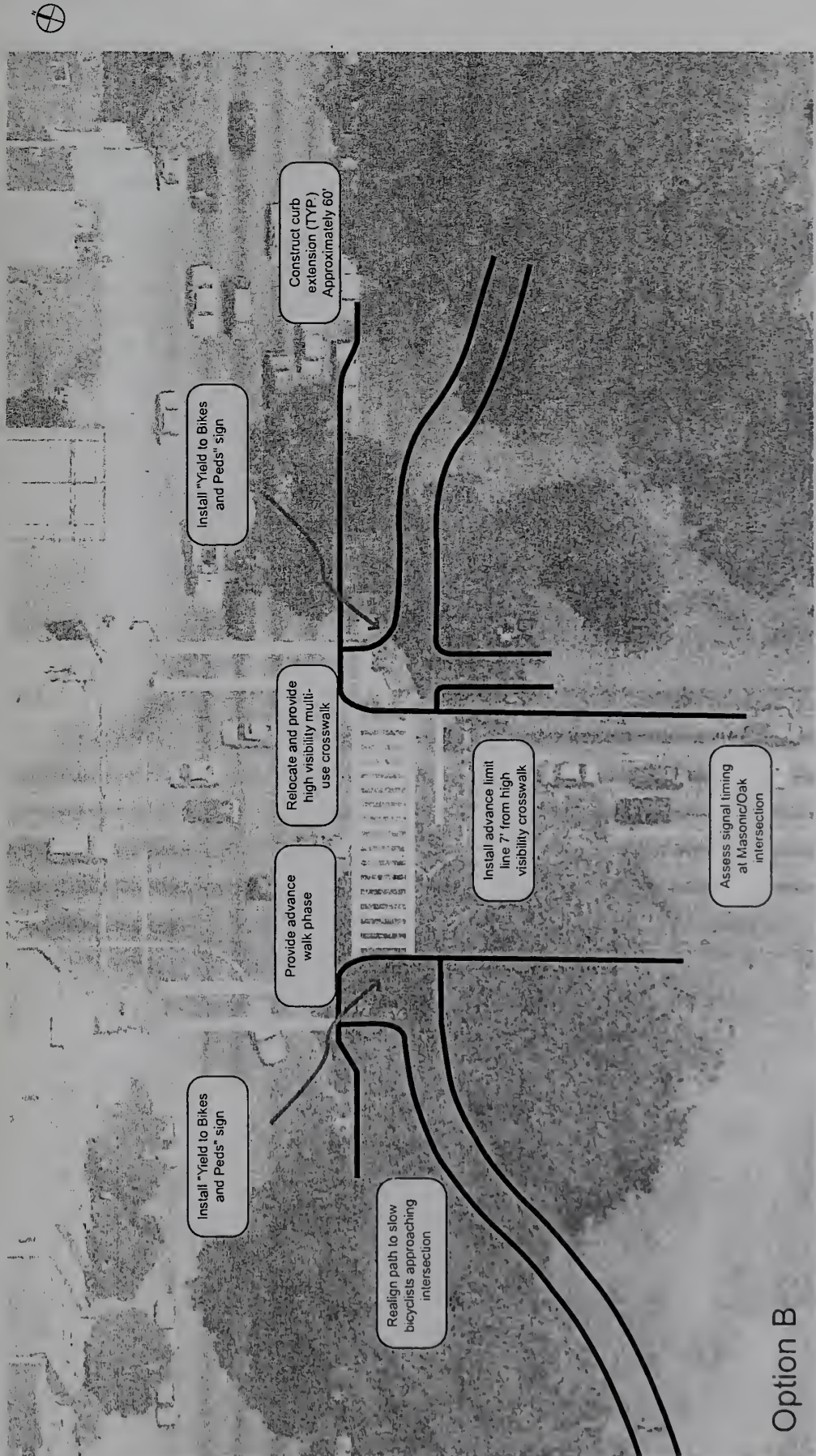


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Fell Street/Masonic Avenue Intersection

Design Concept



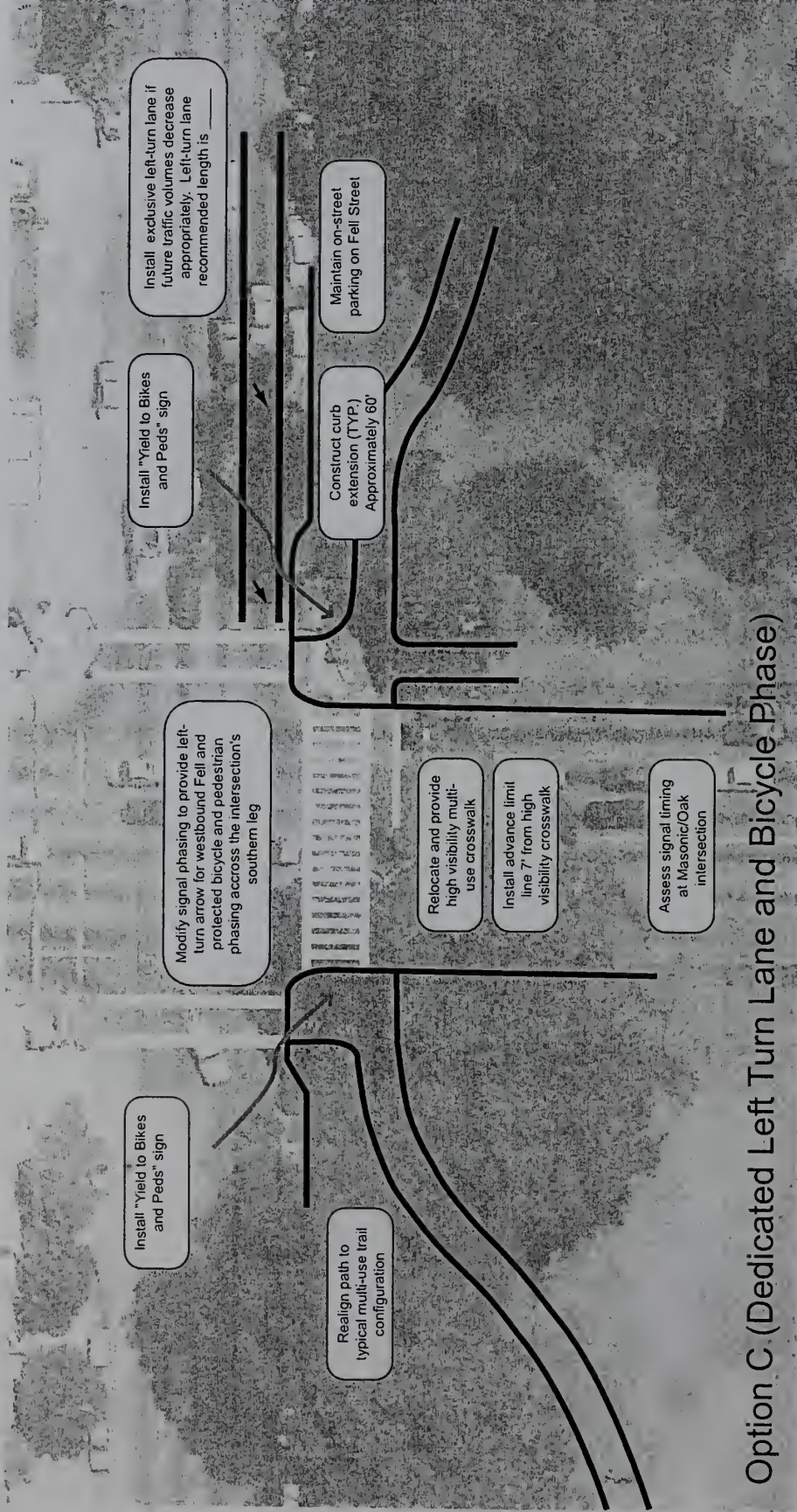
Option B

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Fell Street/Masonic Avenue Intersection

Design Concept



Option C. (Dedicated Left Turn Lane and Bicycle Phase)

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ILLINOIS STREET

SUMMARY SHEET OUTLINE

General Project Description

Illinois Street is a low-volume street with a variety of truck and private vehicle traffic serving primarily industrial land uses. In general, Illinois Street provides one travel lane in each direction, with a mix of on-street parking including both parallel and perpendicular. The parking/sidewalk configuration along the street varies, resulting in a complex project with several design segments. Numerous loading docks and arcades, and the existing freight rail line and future Muni turnaround in the center of the street, are addressed in the proposed design(s). Illinois Street is identified as a preferred bicycle improvement corridor by a variety of City and regional agencies based on its relationship to other local projects including Third Street Light Rail, Mission Bay, and the Central Waterfront Better Neighborhood Plan.

History/Background

- Third Street was the original north-south bike route in the area with three travel lanes in each direction. With the loss of street width and lanes to the Third Street Light Rail project, Illinois Street has been identified as the replacement route.
- The Central Waterfront Neighborhood Plan identifies bicycle and pedestrian circulation throughout the plan area as priorities and specifically addresses the need for continuous sidewalks, a north-south bicycle route on Illinois Street, and marking of the SF Bay Trail.
- The Central Waterfront Neighborhood specifies that bike lane striping should be dropped at perpendicular parking and loading docks. Additional research is being conducted on appropriate design solutions for this situation.
- ABAG Bay Trail Plan identified portions of Illinois Street as a proposed on-street segment of the Bay Trail.
- During Third Street Light Rail construction, Illinois Street from 16th to Marin Streets is being used as a detour route.
- Illinois Street will become a primary truck route upon completion of the Illinois Street bridge and Third Street light rail projects.
- Illinois Street is the primary route for industrial access and serves as the “collector” street for industrial/commercial traffic for southeast section of San Francisco.

Design Segments

Section A: 16th Street to Mariposa Street (See Concept Diagram)

- 16th to Mariposa Streets, both directions: Retain parallel parking and stripe a 5' bike lane and 12' travel lane in both directions.

Section B: Mariposa Street to 18th Street (See Concept Diagram)

Option 1 (Angle Parking)

- Mariposa to 18th Streets, southbound: Elimination of southbound tow-away lane allows for an 8' parking lane, 5' bike lane, and 12' travel lane.

- Mariposa to 18th Streets, northbound: Conversion of existing head-in parking to back-in 60-degree angled parking allows for an 18' parking lane, 5' bike lane, and 12' travel lane. Two existing northbound lanes, a dedicated right-turn lane onto Terry Francois Boulevard and right-turn/through lane, require that the bike lane is dropped unless one of the northbound lanes is removed.

Option 2 (Expand Sidewalk, Parallel Parking)

- Mariposa to 18th Streets, southbound: Elimination of southbound tow-away lane allows for an 8' parking lane, 5' bike lane, and 12' travel lane.
- Mariposa to 18th Streets, northbound: Expanding the sidewalk to 15' requires that the current head-in parking being converted to parallel parking. A 5' bike lane and 12' travel lane would then be striped. Two existing northbound lanes, a dedicated right-turn lane onto Terry Francois Boulevard and right-turn/through lane, require that the bike lane is dropped unless one of the northbound lanes is removed.

Section C: 18th Street to 19th Street (See Concept Diagram)

Option 1 (Prior to 3rd Street Light Rail Turnaround)

- 18th to 19th Streets, both directions: Elimination of southbound tow-away lane allows for an 8' parking lane, 5' bike lane, and 12' travel lane in both directions.

Option 2 (With 3rd Street Light Rail Turnaround)

- 18th to 19th Streets, both directions: DPT, Muni, and the Port should communicate throughout the development and construction of the 3rd Street Light Rail turnaround. Currently the proposal is to have a 14' wide curb lane and 11' light rail lane in the southbound direction, 8' raised platform, and 14' shared lane alongside an 8' parking lane in the northbound direction.

Section D: 19th Street to 20th Street (See Concept Diagram)

Option 1 (Angled Parking on Eastside, No Parking on Westside)

- 19th to 20th Streets, southbound: Elimination of southbound tow away lane allows for a 6' curbside bike lane and 12' travel lane.
- 19th to 20th Streets, northbound: Constructing an 11' sidewalk and converting the existing head-in parking to back-in angled parking allows for a 6' bike lane and 12' travel lane. No sidewalk currently exists here and there is a drop-off beyond the existing fence.

Option 2 (Parallel Parking on both sides)

- 19th to 20th Streets, southbound: Elimination of southbound tow away lane allows for an 8' parking lane, 5' bike lane, and 12' travel lane.
- 19th to 20th Streets, northbound: Constructing a 15' sidewalk and converting the existing head-in parking to parallel allows for a 5' bike lane and 12' travel lane. No sidewalk currently exists here and there is a drop-off beyond the existing fence.

Section E: 20th Street to 22nd Street (See Concept Diagram)

Option 1 (Narrowed Sidewalk)

- 20th to 22nd Streets, southbound: Existing roadway is not striped and has loading bay and arcades immediately adjacent curb line, allowing for development of 6' curbside bike lane (with appropriate signage, and pending Port/Planning/DPT agreement) and 12' travel lane.
- 20th to 22nd Streets, northbound: Existing roadway is not striped and has existing power poles in right of way (requires confirmation of exact location) and unlegislated head-in parking. Relocating poles and narrowing sidewalk to 11' sidewalk allows for 18' back-in angled parking, 6' bike lane, and 12' travel lane.
- Appropriate treatments for potential bike route/loading dock conflict should be developed for the segments adjacent active loading docks.

Option 2 (No Sidewalk Change)

- 20th to 22nd Streets, southbound: Existing roadway is not striped and has loading bay and arcades immediately adjacent curb line, allowing for development of 5' curbside bike lane (with appropriate signage, and pending Port/Planning/DPT agreement) and 12' travel lane.
- 20th to 22nd Streets, northbound: Existing roadway is not striped and unlegislated head-in parking, allowing for creation of 16' 45-degree angled parking lane, 5' bike lane, and 12' travel lane.
- Appropriate treatments for potential bike route/loading dock conflict should be developed for the segments adjacent active loading docks.

Section F: 22nd Street to 25th Street (See Concept Diagram)

- 22nd to 25th Streets, both directions: Retain parallel parking and stripe a 5' bike lane and 12' travel lane in both directions.
- Appropriate treatments for potential bike route/loading dock conflict should be developed for the segments adjacent active loading docks.

Section G: 25th Street to Marin Street (See Concept Diagram)

- 25th to Marin Streets, both directions: Construct 10' wide sidewalks (to be developed by Port) and stripe 8' parking lane, 5' bike lane and 11' travel lane in both directions with center 12' turn lane/rail track.
- Appropriate treatments for potential bike route/loading dock conflict should be developed for the segments adjacent active loading docks.

Section H: Marin Street to Islais Creek Bridge (See Concept Diagram)

- Marin Street to Islais Creek Bridge, both directions: Construction of 10' wide sidewalks (to be developed by Port) and striping of an 8' parking lane, 5' bike lane, and 11' travel lane in both directions with a center striped transition lane.

Section I: Islais Creek Bridge (See Concept Diagram)

- Islais Creek Bridge: To be constructed to provide a northbound curb-separated 4' northbound bicycle path, 2 11' travel lanes overlapping a center rail track, and a grade-separated 8' multi-use path for two-way pedestrian traffic and southbound bicycle traffic.

Capacity

- While the project would not remove any full time vehicular through travel lanes along Illinois Street, there are proposed changes to the intersection of Illinois Street/Mariposa Street/Terry Francois Boulevard: remove the southbound tow-away lane that is in effect for Giants games and remove a northbound right-turn lane leading to Terry Francois Boulevard. Initial traffic analysis using a post-ball game count shows that these changes would yield an intersection Level of Service D, with a Level of Service E for motorists turning left from Terry Francois Boulevard to Illinois Street. It should be noted that post event traffic is generally expected by spectators, and that the trade-off is for increased parking and a full time bike lane in the southbound direction.

Transit

- Muni Route 48 traverses Illinois Street between 20th and 22nd Streets. The project will not impact this route.
- Preliminary plans for the 3rd Street Light Rail turnaround turning east on 18th Street, south on Illinois Street, and west on 19th Street back to 3rd Street have been approved by the MTA Board to allow changing the sidewalk to accommodate the following cross-section from west to east: 10 ft sidewalk, 14' travel lane, 11' LRV lane, possible 8' platform, 14' travel lane, 8' parking (there is also a 15' dedicated sidewalk on the east side). Coordination between the Bike Plan Update team and the Muni turnaround project team needs to take place as both plans develop.

Parking

Generally:

- Parking is permitted on both sides of Illinois Street, except where loading docks occur. Parallel on-street parking is prevalent throughout the corridor, except on the east side between 19th and 22nd, where 90-degree parking is provided. There is space for about 150 vehicles to park in this area.
- On-street parking is not allowed on the west side of Illinois Street between Mariposa and 20th Street during Giants home games. During these periods, the parking lane is used as a secondary southbound travel lane. Removal of tow-away yields more full time spaces.

Option A:

- Suggests narrowed sidewalks and back-in angled parking, yielding more spaces than Option B but costing significantly more.
- The project would convert head-in 90-degree parking spaces into back-in 60-degree spaces on the east side of Illinois Street between 19th and 22nd Streets. This conversion would result in the decrease of about 30 parking spaces. The existing 15-foot wide sidewalk would be narrowed to accommodate this change.
- As rear vehicle overhang of the sidewalk associated with back-in angle parking create specific design considerations in some locations, site specific study should take into account: roadway crown, poles/street furniture on sidewalks close to curb face, drainage, curb height, etc.
- Analysis of number of parking spaces lost and potential mitigation to be completed.

Option B:

- Suggest widening or not narrowing sidewalks and parallel parking, yielding fewer spaces than Option A along Illinois Street.
- Analysis of number of parking spaces lost and potential mitigation to be completed.

Trucks

- Illinois Street is a route used by trucks serving immediately adjacent land uses and will become a primary truck route upon completion of the Illinois Street Bridge.

Pedestrian Concerns

- The project may reduce Illinois Street's east sidewalk between 19th and 22nd Streets from 15 feet to 11 feet wide. Due to anticipated continued low to moderate pedestrian volumes in the area, pedestrians would not be impacted by this change. It should be noted, however, that the east sidewalk is likely to be the location of the Bay Trail.
- No sidewalk currently exists on portions of Illinois between 19th and 20th Streets, and between 20th and 22nd Streets there are various sidewalk widths. Not all details are reflected in Concept Design sheets and sections.
- Existing loading docks result in frequent use of pedestrian realm and parking lane by large trucks for loading and unloading. Development of a policy by the Port, DPT, and Planning regarding sidewalks and bike lanes adjacent loading docks is needed.

Land Use

- Outreach must occur to determine if bike lanes and loading docks can be compatible with industrial users and building owners.
- Existing freight rail located in center of roadway and currently not used will not conflict with location of proposed bike lanes adjacent existing parking
- A parking analysis should be undertaken to identify future development scenarios and land use impact, based on Planning Department input.

Other Departments or Agencies

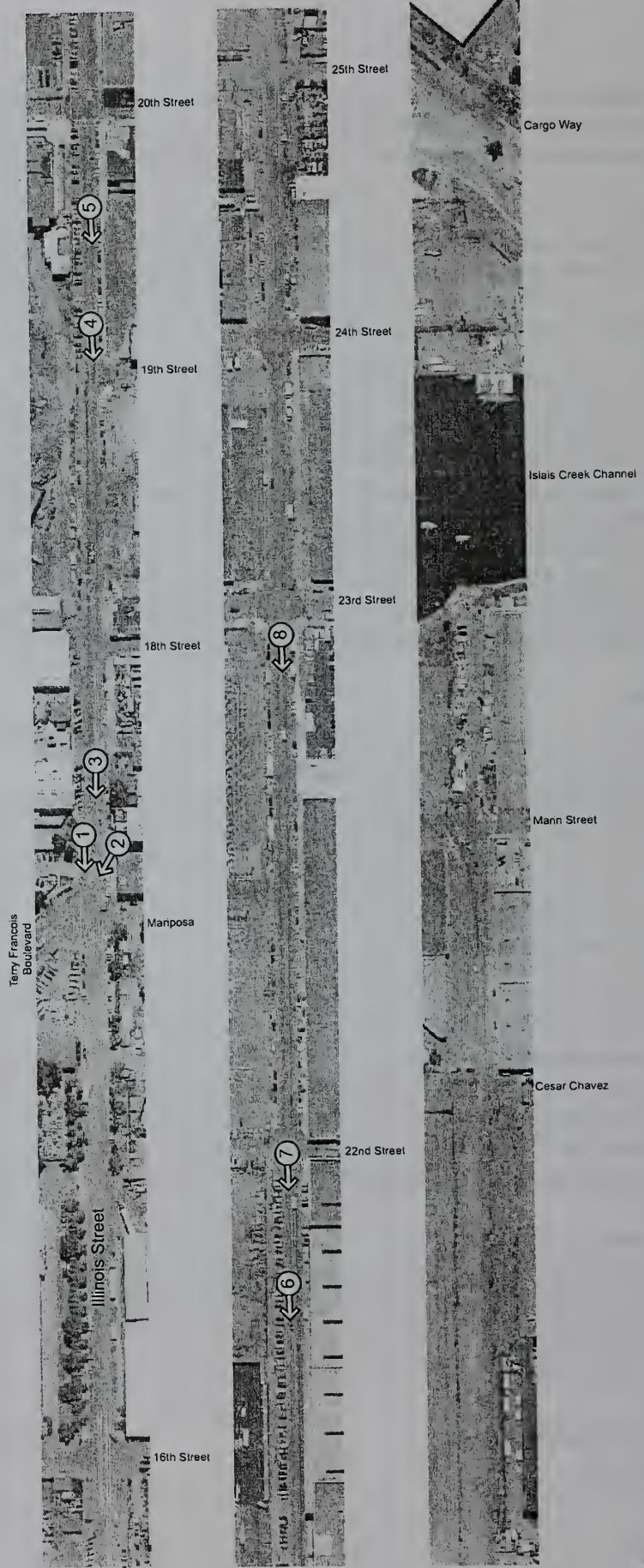
- Port of San Francisco: agreement needed on (1) back-in angled parking configuration, (2) bike lane striping at loading bays and arcades, and (3) new or improved sidewalks.
- Planning Department: agreement needed on location of bike lanes and compatibility with the goals of the Better Neighborhood Central Waterfront Plan.
- Association of Bay Area Governments: agreement needed on design for compliance with Bay Trail recommended design guidelines
- Muni: communicate regarding light rail turnaround and Metro East facility development.

Next Steps

- Potential mitigation for parking loss should be studied.
- Continued coordination with the Port, the Planning Department and the Association of Bay Area Governments is required.
- Begin outreach to industrial operators and owners.



1. Looking northerly along Illinois to the north of Manposa. This section of Illinois is 50 feet wide and includes parallel parking on both sides, as well as railroad tracks along both traffic lanes.
2. View of the Terry Francois Blvd/Illinois intersection, looking northerly towards Terry Francois. Two right-turn lanes feed Terry Francois from northbound Illinois. Terry Francois includes Class II bicycle lanes.
3. Looking northerly toward the Manposa intersection. Note that parking on the east side again changes. Also note the railroad track alignment.
4. Between 19th and 18th, parking on Illinois' east side changes to parallel parking (beyond the pick-up truck).
5. Between 20th and 19th, Illinois' 50-foot cross-section includes parallel parking on the east side, two southbound traffic lanes, one northbound traffic lane, and perpendicular parking on the east side.
6. View of Illinois between 22nd and 20th. Here perpendicular parking is provided on the east side of the roadway and loading docks are on the west side. The roadway is 50 feet wide.
7. The rear-ends of parked vehicles extend in the west side of the roadway north of 22nd.
8. Looking northerly along Illinois just to the north of 22nd. Illinois is 50 feet wide, provides parallel parking along both sides, and has a railroad track along the west lane.

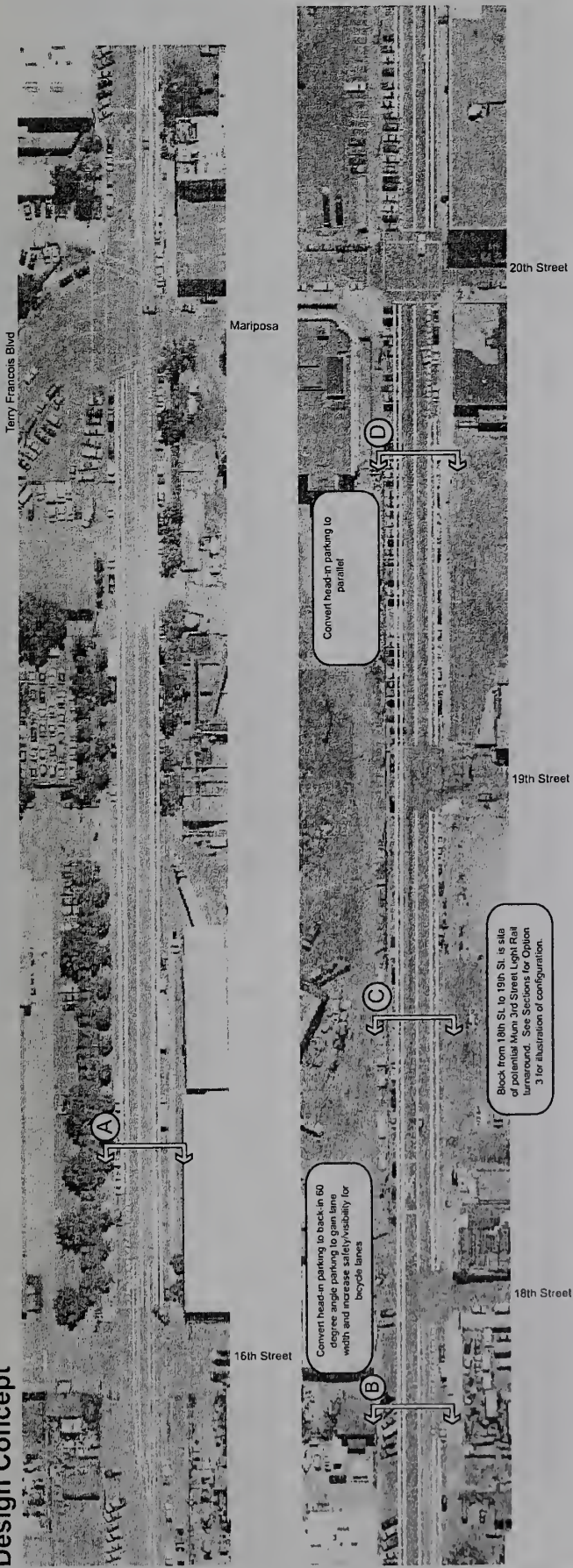


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Illinois Street

Design Concept



Convert head-in parking to back-in 60 degree angle parking to gain lane width and increase safety visibility for beyond lanes

Block from 18th St. to 19th St. is site of potential West and Street Light Road Lane and West Street Light Road Lane 3 for illustration of configuration.

Convert head-in parking to parallel

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Illinois Street

Design Concept

Sections ROW width 80'
Existing 50' Curb to Curb

Ⓐ 16th Street to Mariposa Street



Curb to outside rail
16' (Typ.)

Ⓐ 16th Street to Mariposa Street



Curb to outside rail
16' (Typ.)

Ⓑ Mariposa Street to 18th Street



Curb to outside rail
16' (Typ.)

NOTE: Existing parking is low-away for Giants games.

Ⓑ Mariposa Street to 18th Street



Curb to outside rail
16' (Typ.)
NOTE: Requires removal of parking restrictions and removal of second southbound lane.
Back in 60° angle

Ⓑ Mariposa to 18th



Curb to outside rail
16' (Typ.)

NOTE: Requires removal of southbound parking restrictions, removal of second southbound lane and extension of east sidewalk to eliminate existing parking bay.

ROW width 80'
Existing 50' Curb to Curb

Ⓒ 18th Street to 19th Street

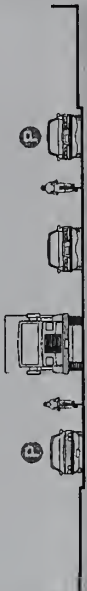


No Developed Sidewalk
11' 10'

Curb to outside rail
16' (Typ.)

NOTE: Existing parking is low-away for Giants games.

Ⓒ 18th Street to 19th Street



Curb to outside rail
16' (Typ.)

NOTE: Requires removal of parking restrictions and removal of second southbound lane.

Ⓒ 18th Street to 19th Street

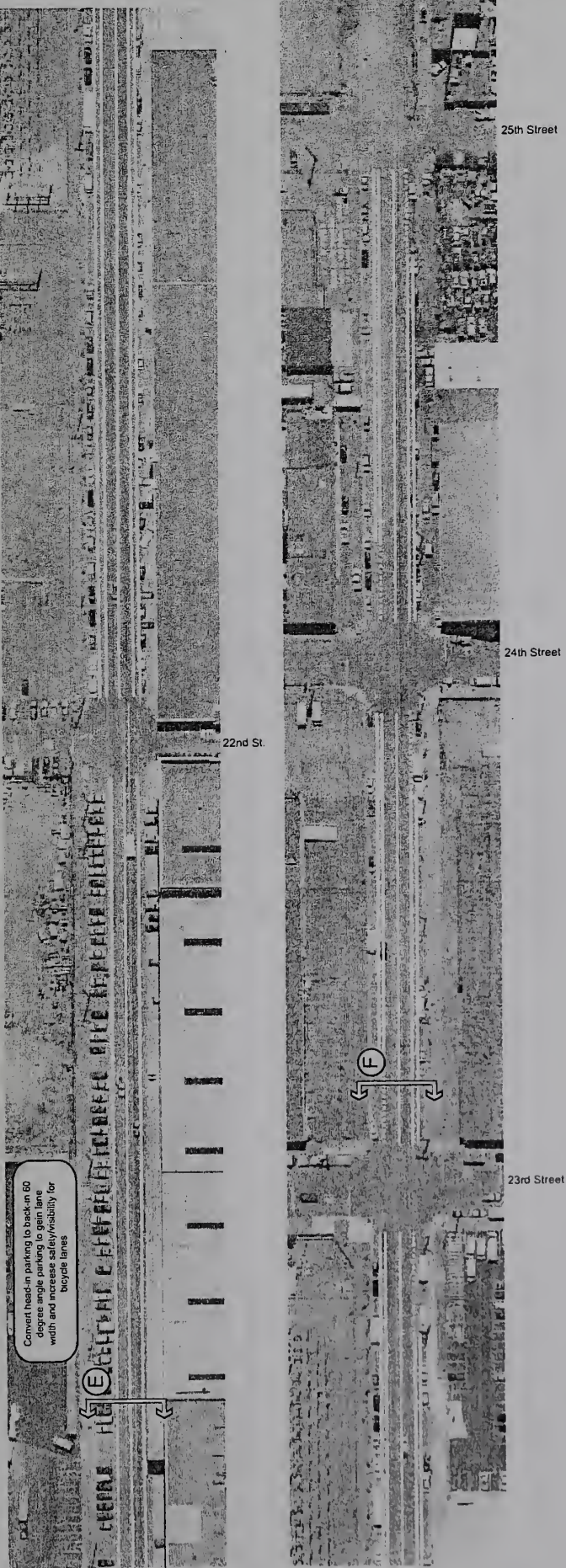


Curb to outside rail
16' (Typ.)

NOTE: Coordination between the Bike Plan Update and the proposed Muni turnaround project needs to take place as both plans develop (track alignment unknown).

Illinois Street

Design Concept



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Illinois Street

Design Concept

ROW width 80'
Existing 50' Curb to Curb

Sections

① 19th Street to 20th Street



15' 11' 15'

Curb to outside rail
16' (Typ.)

NOTE: Existing parking on west side of Illinois Street is low-away for Giants games. Second southbound travel lane becomes right turn lane at 20th.

② 19th Street to 20th Street



15' 6' 12' 12' 6' 18' 11'

Curb to outside rail
16' (Typ.)

NOTE: Requires removal of parking on west side of Illinois Street. Requires removal of second southbound travel lane. Requires narrowing east sidewalk.

③ 19th Street to 20th Street



15' 8' 5' 12' 12' 5' 8'

Curb to outside rail
16' (Typ.)

NOTE: Requires reorientation of existing head in parking to parallel parallel parking, resulting in overall parking loss. Requires removal of second southbound travel lane.

ROW width 80'
Existing 50' Curb to Curb

④ 20th Street to 22nd Street



15' 15' 15'

Curb to outside rail
16' (Typ.)

⑤ 20th Street to 22nd Street



15' 6' 12' 12' 6' 18' 11'

Curb to outside rail
16' (Typ.)

NOTE: Requires power pole relocation/undergrounding and construction of drainage improvements.

⑥ 20th Street to 22nd Street



15' 5' 12' 12' 5' 16' 15'

Curb to outside rail
16' (Typ.)

NOTE: Requires power pole relocation/undergrounding and construction of drainage improvements.

ROW width 80'
Existing 50' Curb to Curb

⑦ 22nd Street to 25th Street



15' 15' 15'

Curb to outside rail
16' (Typ.)

⑧ 22nd Street to 25th Street

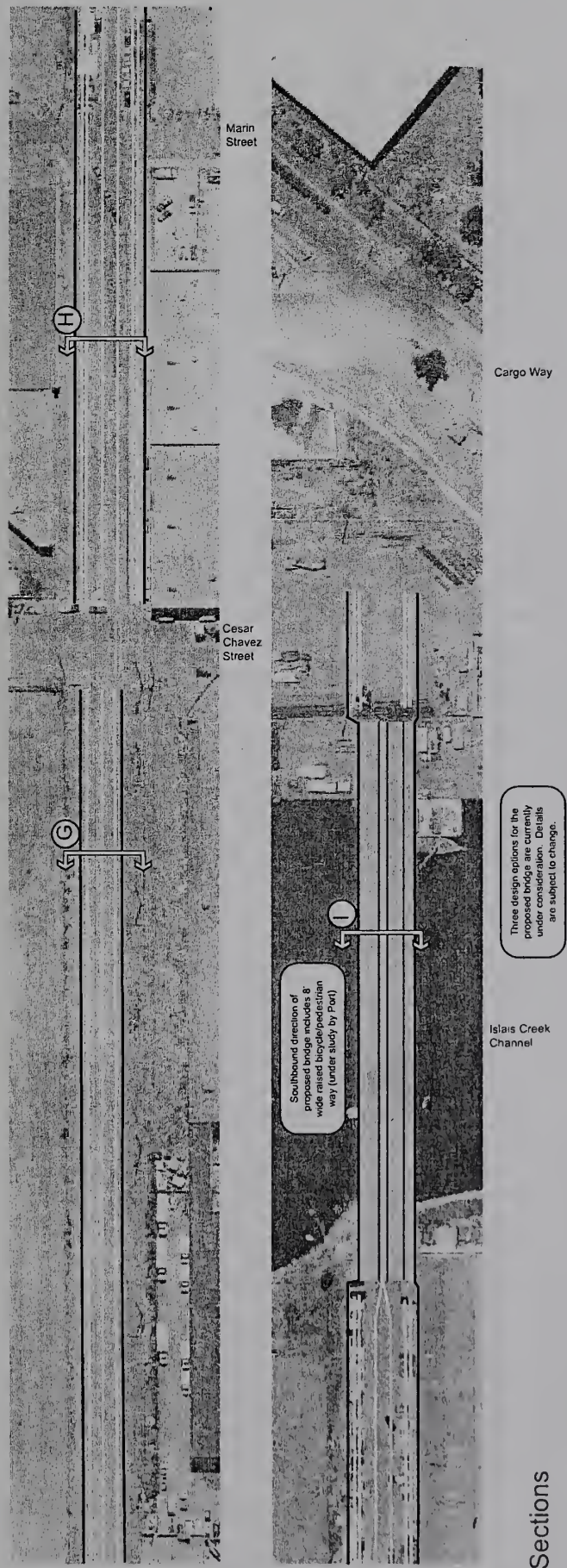
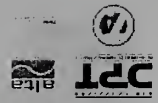


15' 8' 5' 12' 12' 5' 8'

Curb to outside rail
16' (Typ.)

Illinois Street

Design Concept



Sections

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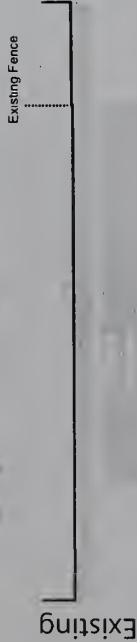
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Illinois Street

Design Concept

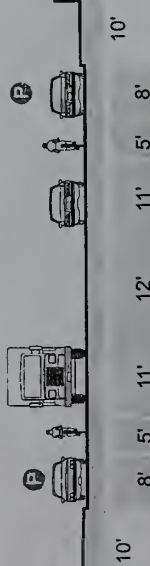
Sections ROW width 80'

Ⓒ 25th Street to Cesar Chavez



NOTE: Existing condition is undeveloped graded roadway with existing rail track.

Ⓒ 25th Street to Cesar Chavez



NOTE: Two 10' sidewalks to be considered by Port with 15' wide bulb outs on some corners (subject to change).

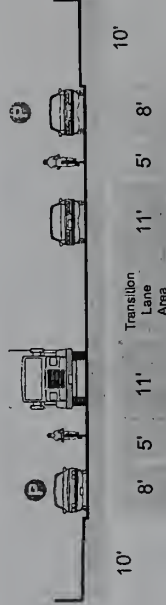
ROW width 80'

Ⓗ Marin Street to Islais Creek Bridge



NOTE: Existing condition is partially developed roadway with existing vehicle parking and storage.

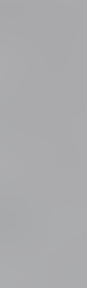
Ⓗ Marin Street to Islais Creek Bridge



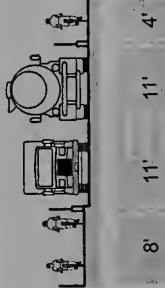
NOTE: Two 10' sidewalks w/15' bulb outs to be considered by Port

ROW TBD

Ⓘ No Existing Bridge



Ⓘ Bridge Section



NOTE: Rail in center. Eight-foot wide, separated multi-use pathway is intended for pedestrians and southbound bicyclists. Four-foot path is intended for northbound bicyclists.

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SUMMARY SHEET

LAGUNA HONDA BOULEVARD, PLAZA STREET TO WOODSIDE AVENUE

Project Description

Laguna Honda Boulevard is a medium-volume roadway in the central portion of San Francisco that provides access between the Inner Sunset and Twin Peaks/West Portal neighborhoods. This section of Laguna Honda Boulevard also provides access to Laguna Honda Hospital. Laguna Honda Boulevard has striped bike lanes between Lawton Street and Plaza Street, north of the Muni Metro Forest Hill Station. Bicycle improvements to this section would benefit bicyclists by extending the striped bike lanes and improving the crossing at the Laguna Honda/Dewey Boulevards intersection. Speed limit along this section of Laguna Honda Boulevard is 35 mph.

History/Background

Bike lanes were striped on Laguna Honda Boulevard north of Clarendon Avenue and on Dewey Boulevard in 1996. In 1999, the bike lanes on Laguna Honda Boulevard were extended south of Clarendon Avenue. As described below under Design Segments, filling this gap by adding bike lanes on Laguna Honda Boulevard south of the existing bike lanes and north of Dewey Boulevard is complex. In 2002, DPT Bicycle Program staff applied for and received \$160,000 in STIP funds to do detailed design (but not construction) work to add these bike lanes and to design the rehabilitation of the O'Shaughnessy Bicycle Path. Due to staffing constraints, this design work has not begun. Bicycle Program staff informed the Laguna Honda Hospital Replacement Project Manager about this bike lane project, since it could require shifting the sidewalk toward the hospital property. As part of the hospital replacement project, consideration is being given to adding bicycle and pedestrian trails on the hospital property. However, these trails are currently unfunded and would not be an adequate substitute for extending the Laguna Honda Boulevard bike lanes.

Design Segments

- *Southbound:* For both options, the bike lane will be extended from just north of Plaza Street to the Muni Forest Hill Station. The bike lane will then be dashed across the southbound exit area from the transit bus pullout at the Forest Hill Station, and continue south to the intersection with Dewey Boulevard. Option 1 requires narrowing the median to two feet, and elimination of the dedicated left-turn lane entry to Laguna Honda Hospital. This allows for the creation of two vehicle left-turn lanes, a bike left-turn lane, a vehicle through lane serving Dewey Boulevard, and a bike lane serving Dewey Boulevard. Conversion of the center through/left-turn lane to left-turn only would simplify turning movements at this intersection and allow bicyclists to proceed more safely through the intersection to continue along southbound Laguna Honda Boulevard. Striping of the southbound bicycle lane continuously from the Forest Hill Station to Dewey Boulevard requires balancing of traffic lane widths on north and southbound Laguna Honda Boulevard, minimum allowable median width, and allowable sidewalk narrowing on northbound Laguna Honda Boulevard (See "Northbound" discussion below). Use of a colored bike lane may be appropriate in areas where cyclists have the right of way in conflict areas. Option 2 assumes no additional roadway width can be obtained. In this case, there is room for either a through bike lane along the curb or a left turn bike lane. "Sharrows" or a "ghost bike lane" could be used to

accommodate the movement that does not receive a bike lane. However, there may be other means of obtaining additional roadway width, such as relocating the sidewalk along the Forest Hill Muni Station. A utility outcropping near the intersection with Dewey Boulevard creates a bottleneck, however.

- *Northbound:* For Option 1, a northbound bike lane would be striped on Laguna Honda Boulevard north of the intersection with Dewey Boulevard. This requires narrowing of the existing two northbound traffic lanes from 14' outside and 12' inside to 13' outside and 12' inside. These lane widths should be maintained due to the roadway curve geometry. Under this scenario, the existing sidewalk requires narrowing from 9' to 7' to create sufficient width for a 5' bike lane. There are utility poles on the sidewalk approximately 6" from the existing curb. Any sidewalk narrowing will require relocation of these utility poles. The eastern edge of the existing sidewalk is formed by an existing concrete retaining wall. Any plans to maintain the existing sidewalk width by widening it to the east will require reconstruction of this retaining wall and coordination with the Laguna Honda Hospital Replacement project. Special signage and/or striping should be considered at the northbound bus pullout/traffic turnaround to inform motorists and transit operators to expect bicycles passing the entry and exit for this pullout. Continuing north from the northern exit of the transit pullout, shifting the existing sidewalk 6 feet east would be required to widen the roadway. This additional roadway width would accommodate the bicycle lane.

Capacity

- Capacity may be affected since the existing third southbound travel lane adjacent to the transit bus pullout at Forest Hill Station will be removed to provide a bike lane. The third travel lane would be retained between the Muni Station and the Laguna Honda/Dewey Boulevards intersection.
- Capacity at the Laguna Honda/Dewey Boulevards intersection would be affected by the proposed lane configuration change in Option 1. Due to the high volume of vehicles turning left, the addition of a second dedicated left turn lane is not anticipated to have a negative impact on capacity and will likely clarify and improve operations.

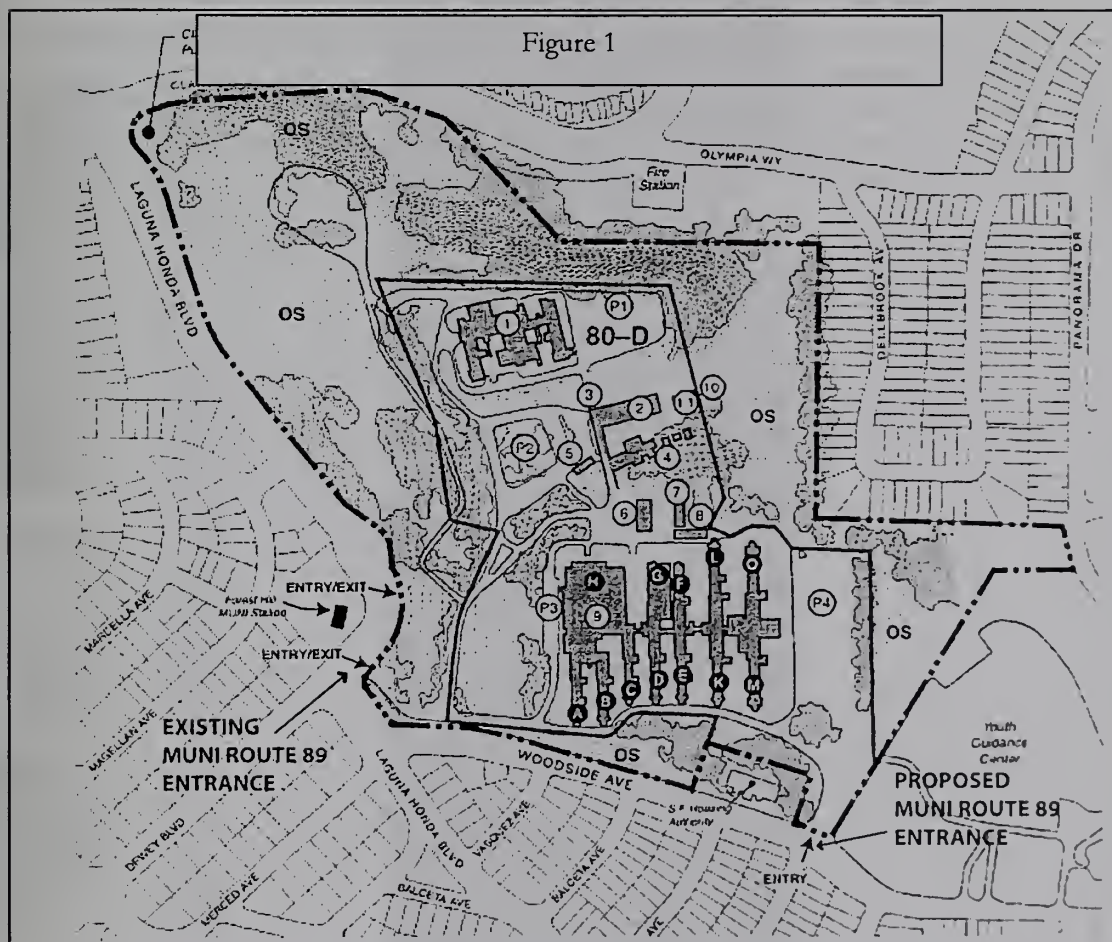
Parking

- Parking on the southbound segment of Laguna Honda Boulevard between Dewey Boulevard and Woodside Avenue would be removed to provide for greater transition room for bicyclists. Three parking spaces would be removed.

Transit

- Muni lines 36, 43, 44, 52, and 89 use Laguna Honda Boulevard. Traffic analysis must be conducted for potential impacts to these lines that would be created by changed lane configurations and implementation of the proposed bicycle lanes.
- Option 1, elimination of the left-turn pocket entrance to Laguna Honda Hospital, would impact Muni line 89. Current volumes at this left-turn pocket entrance are ten vehicles per hour, with four of the ten vehicles being Muni buses. One possible option for Muni line 89 is to enter Laguna Honda Hospital from Woodside Avenue, as shown in Figure 1 below. The alternative entrance at the signalized intersection of Woodside Avenue and Idora Avenue requires additional analysis and design concepts. Currently, left-turn movements are restricted from Laguna Honda Boulevard. In order to provide for Muni access at the entrance, this left turn restriction would have to be eliminated for transit

vehicles and a left-turn pocket created. This would require minor modification to an existing pedestrian refuge island. The existing two way entry/exit width is 34'-6". To exit Laguna Honda Hospital, Muni would use the same exit onto Laguna Honda Boulevard as it does today.



Pedestrian Concerns

- Given the amount of sidewalk and median relocation/narrowing proposed, pedestrian accommodation must be considered throughout the design process. Pedestrian presence is moderate/high in this area.

Land Use

- Land use is a mix of residential, commercial, and open space, with large attractors such as the Forest Hill Station and Laguna Honda Hospital in the project area.

Other Departments or Agencies

- Agencies to keep involved in the process include Muni, the Department of Health/Laguna Honda Hospital Replacement team, and the Department of Real Estate. The Department of Public Works will also be directly involved with the design process.

Next Steps

- Capacity analysis at the Laguna Honda/Dewey Boulevards intersection
- Analysis of proposed Muni line 89 modification and rerouting to Woodside/Idora Avenues signalized intersection
- Property ownership boundaries adjacent to the east sidewalk should be identified.
- Coordination with the Department of Public Works to begin the process of creating Plans, Specifications, and Estimates (PS&Es).
- Coordination with City of San Francisco Department of Real Estate and City of San Francisco Department of Health regarding potential sidewalk expansion (in lieu of narrowing) to provide adequate width for northbound bike lane.



1. Laguna Honda near Clarendon, facing north. Bike lanes exist on Laguna Honda between Lawton (in the north) to a few hundred feet south of Clarendon.



2. Laguna Honda, north of the Muni Station, looking north. If the sidewalk or roadway is widened, utility poles will need to be moved.



3. Laguna Honda, north of the Muni Station, looking northwest. The bike lane could be extended in this section. Since parking is prohibited.



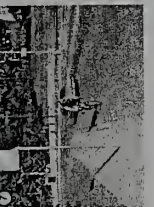
4. Laguna Honda at the Muni Forest Hill Station, looking at the northbound lanes. The bus pullout and turnaround creates a conflict point for cyclists.



5. Laguna Honda approaching the Muni Forest Hill Station. Both motorists and buses access the station, thus creating conflicts for both cyclists and pedestrians.



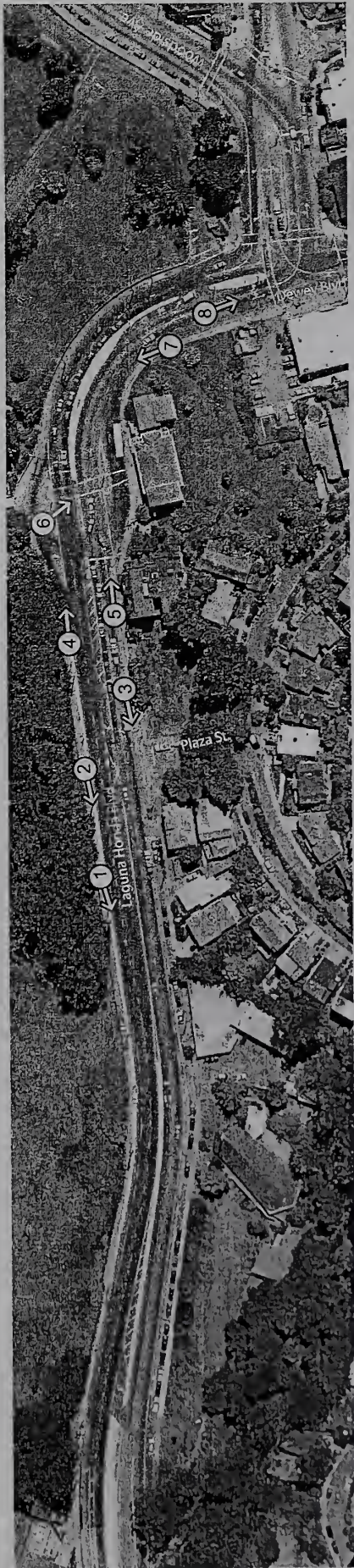
6. Laguna Honda at Muni Station, looking northwest. Here, there is a signalized crossing, but pedestrians often cross without waiting for the signal.



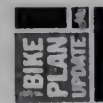
7. Laguna Honda, south of Muni Station. There are no bike lanes on this section of Laguna Honda.



8. Laguna Honda at intersection with Dewey, facing south. Cyclists wishing to travel east to Woodside encounter a difficult intersection crossing here.



Laguna Honda Blvd.
Plaza St. to Woodside Ave.



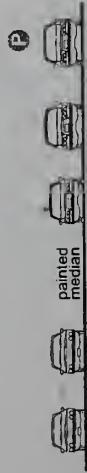
This draft diagram is designed for public input and discussion purposes. This is a representative diagram and is not based on actual survey data. All information presented in this diagram is subject to modification.

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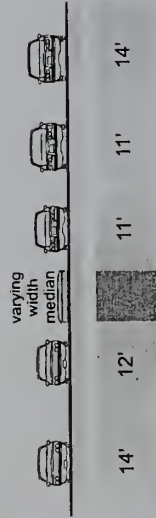
Street Cross-Sections (looking east to Woodside Ave.)

① PLAZA STREET TO MUNI STATION

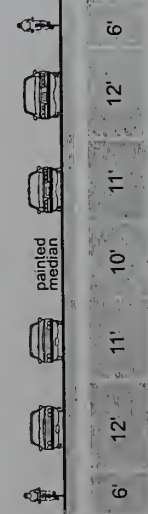


Existing

② MUNI STATION TO DEWEY/WOODSIDE AVENUE

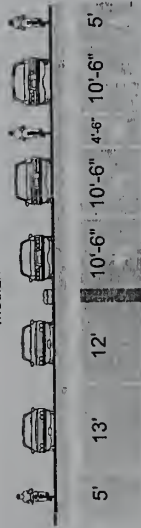


2' median

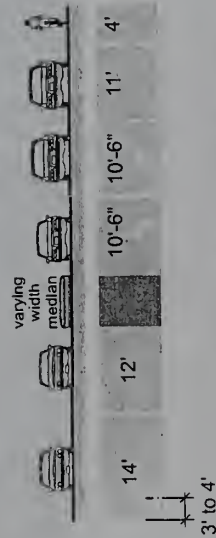


Option 1

NOTE: Sidewalk narrowing and/or roadway widening on northbound Laguna Honda is required to accommodate bike lanes in both directions on this segment.



NOTE: Road widening of Laguna Honda Boulevard is required to accommodate bike lanes in both directions. This may be accomplished by narrowing/relocation sidewalks and/or narrowing the median. To narrow the median, it will be necessary to remove the left turn lane on the southbound Laguna Honda Boulevard leading to the hospital. Given the curve of the roadway and the presence of buses, wider than normal traffic lanes are required.



3' to 4'

NOTE: There is currently room for either a through or left turn bike lane on the southbound Laguna Honda Boulevard approach to Dewey Boulevard if the roadway cannot be widened in that direction. "Sharrows" or a "ghost bike lane" should be considered for the southbound bicycle movement that is not accommodated by a bike lane. If only the northbound portion of the roadway can be widened, then this direction can have a bike lane as shown in Option 1.

LAGUNA HONDA BLVD.

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LAGUNA HONDA BLVD.
 Plaza St. to Woodside Ave.

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SUMMARY SHEET OUTLINE

MARKET STREET, OCTAVIA STREET TO 17TH STREET

Project Description

Market Street has the highest volume of bicycle traffic in the City. A bike count done in July 2002 showed that some sections of the street have bike volumes of over 200 cyclists per hour during the peak periods. Market Street is flat and connects much of the City's existing bicycle route network, including 14th Street, the Duboce Avenue Bikeway, Valencia Street, Page Street, 11th Street, Polk Street, 8th Street, 7th Street, and The Embarcadero. It also connects downtown to the neighborhoods with the highest bicycle usage: the Mission, the Castro, the Haight, Hayes Valley, and Western Addition. Upper Market Street (defined as Octavia Street to 17th Street for the purposes of this project) is characterized by wide intersections with intermittent medians and transit boarding islands. Vehicles move at higher speeds during off-peak hours on this upper segment and there are more vehicle turning movements at intersections due to fewer turning prohibitions. While bike lanes exist on much of this segment, they are discontinued at approaches to intersections where transit islands, narrow lanes, and existing parking lanes do not afford sufficient roadway width for a standard bike lane. Bicycle improvements to this segment of Market Street require analysis of the application of specific Supplemental Design Guideline standards, analysis of changes to existing lane configuration at specific intersections, and analysis of parking removal in some locations.

History/Background

Existing bike lanes on Upper Market Street were striped in 1984. The 1997 Bike Plan recommended various improvements to Market Street, but did not discriminate between the various segments and cross section variations along the street. The discontinuous nature of the existing bike lanes as a result of the transit island boarding platforms was noted, but no specific recommendations were made for addressing this design issue.

Design Segments

Three typical existing conditions diagrams are presented in the Concept Design Sheets for this project. Existing Condition, Typical 1 illustrates a Market Street intersection approach with a transit island, through lane, dedicated right turn lane, and curb, with curbside parking immediately upstream and partially overlapping with the transit island. Existing Condition, Typical 2 illustrates a Market Street intersection approach with a transit island, shared through/right-turn lane, corner bulb-out, and curbside parking adjacent to the transit island. Existing Condition, Typical 3 illustrates a Market Street intersection approach with a transit island, through lane, shared through/right-turn lane, corner bulb-out, and curbside parking adjacent to the transit island.

There are several design options presented for each typical Existing Condition. Options A, B, and C are presented for Existing Condition, Typical 1. Options D and E are presented for Existing Condition, Typical 2. Options F and G are presented for Existing Condition, Typical 3.

The design options are as follows:

- A. *Shared Bicycle/Right Turn Pocket*: Dashed strip overlapping the inside of the dedicated right turn lane.
- B. *Bicycle Channel*: A two- to three-foot wide channel striped between the existing through and right turn lanes.
- C. *Remove Right Turn Lane*: Replace existing vehicle right turn lane with an extended bike lane.

- D. *Curbside Bicycle Channel*: A two- to three-foot wide channel striped adjacent to the curb.
- E. *Reduced Curb Extension and Remove Parking (if needed)*: Shave back existing curb extension to provide width for an extended bike lane. Remove curbside parking adjacent to boarding island to extend bicycle lane.
- F. *Curbside Bicycle Channel*: A two- to three-foot wide channel striped adjacent to the curb. (Similar to D, however the existing condition has an additional through lane).
- G. *Reduced Curb Extension and Remove Parking (if needed)*: Shave back existing curb extension to provide width for an extended bike lane. Remove curbside parking adjacent to boarding island to extend bicycle lane. (Similar to E, however the existing condition has an additional through lane).

Locations where each of the above options can be applied are shown on the attached Concept Design Sheets and listed below.

- Market Street and Noe Street Westbound: F, G
- Market Street and Noe Street Eastbound: A, B, C
- Market Street and Sanchez Street Westbound: A, B, C
- Market Street and Sanchez Street Eastbound: A, B, C
- Market Street and Church Street Westbound: A, B, C
- Market Street and Church Street Eastbound: D
- Market Street and Dolores Street Eastbound: A, B, C
- Market Street and Buchanan Street Westbound: D, E
- Market Street and Laguna Street Westbound: D, E
- Market Street and Guerrero Street Eastbound: D, E

Capacity

- Capacity loss at each intersection where lane removal is recommended should be evaluated to determine if additional design modifications are necessary.

Parking

Parking would be impacted at the following locations under the specific options:

- Market Street at Noe Street, Westbound
 - F – no parking impact
 - G requires removal of two to five parking spaces
- Market Street at Noe Street, Eastbound
 - A, B and C require removal of two to four parking spaces
- Market Street at Sanchez Street, Westbound
 - A, B and C require removal of two to four parking spaces
- Market Street at Sanchez Street, Eastbound
 - A, B and C require removal of two to four parking spaces
- Market Street at Church Street, Westbound
 - A, B and C require removal of two to four parking spaces
- Market Street at Church Street, Eastbound
 - No parking impact
- Market Street at Dolores Street, Eastbound
 - A, B and C require removal of two to four parking spaces
- Market Street at Laguna Street, Westbound

- D – no parking impact
 - E requires removal of two to four parking spaces
- Market Street at Buchanan Street, Eastbound
 - D – no parking impact
 - E requires removal of two to four parking spaces
- Market Street at Guerrero Street, Eastbound
 - D – no parking impact
 - E requires removal of two to four parking spaces

Transit

- Muni service should not be impacted. Muni route 37 and the F-Line operate along this section of Market Street, while routes 22, 24, 35, and the J-Line cross it.

Pedestrian Concerns

- Narrowing corner bulb-outs will increase the crossing distance for pedestrians.

Land Use

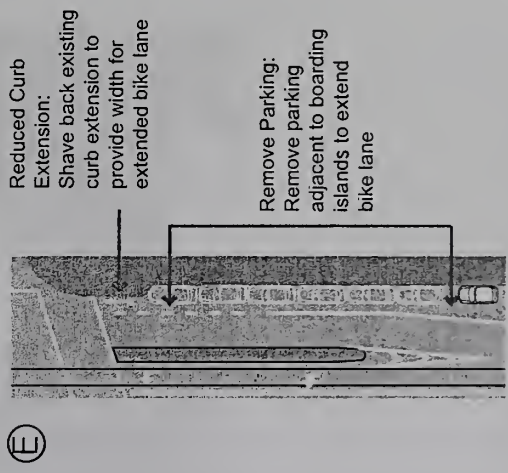
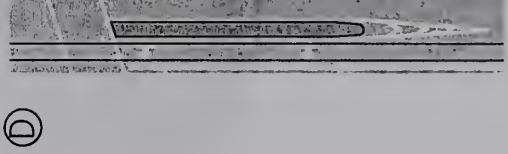
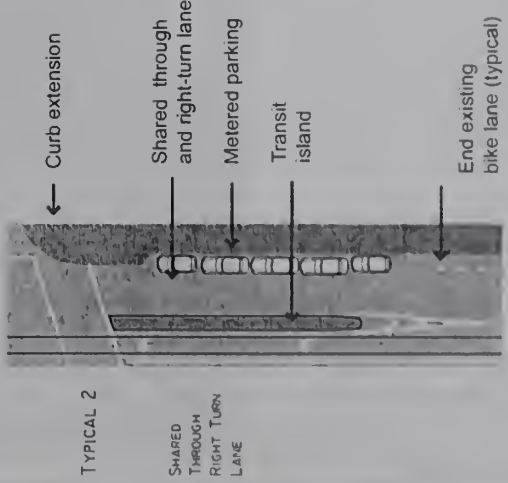
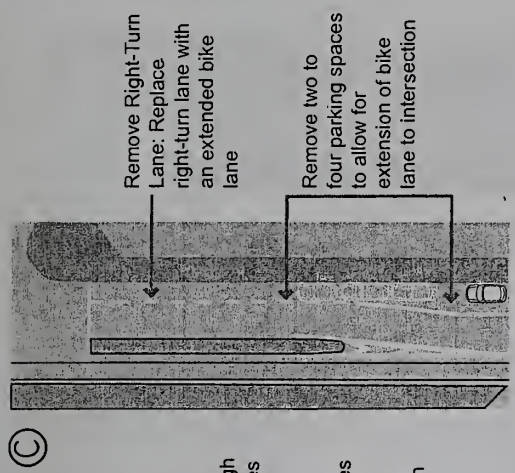
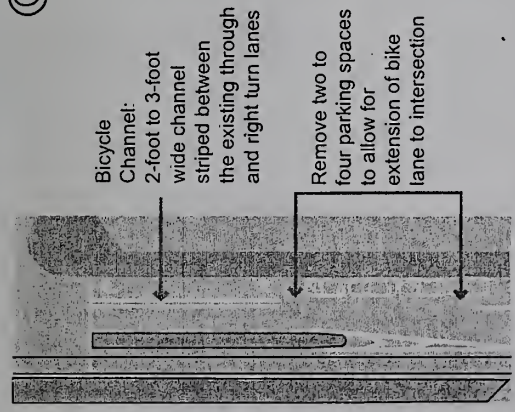
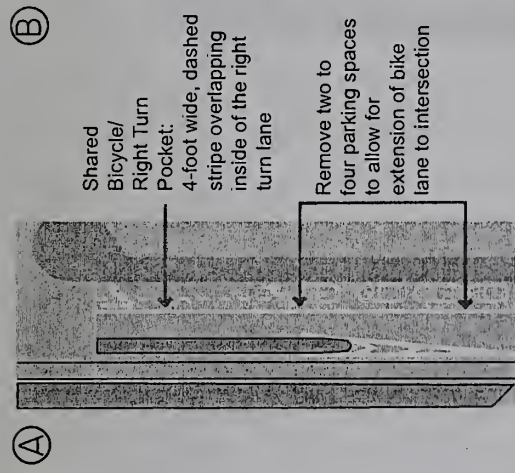
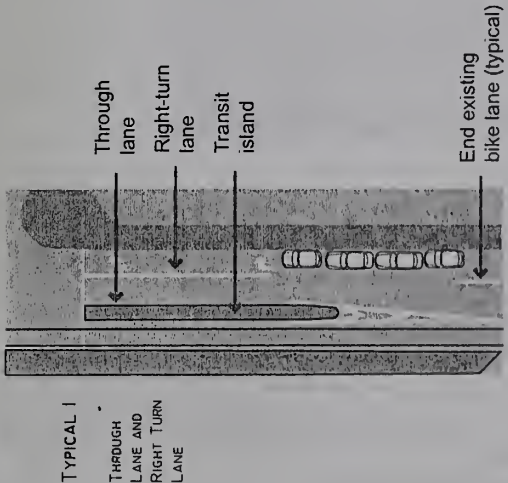
- Upper Market Street is a regionally significant mixed-use commercial, retail and residential corridor. Existing land uses and businesses depend on access by all transportation modes, including pedestrian, bicycle, transit, and private vehicles.

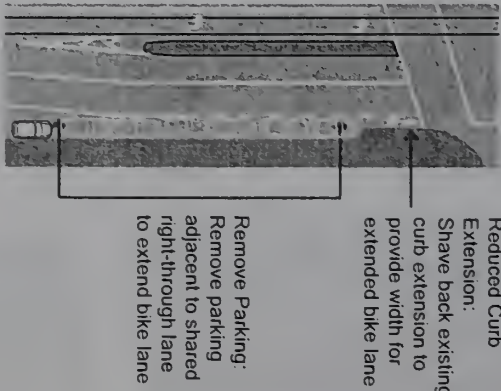
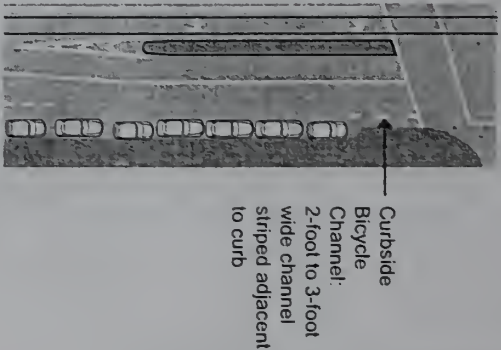
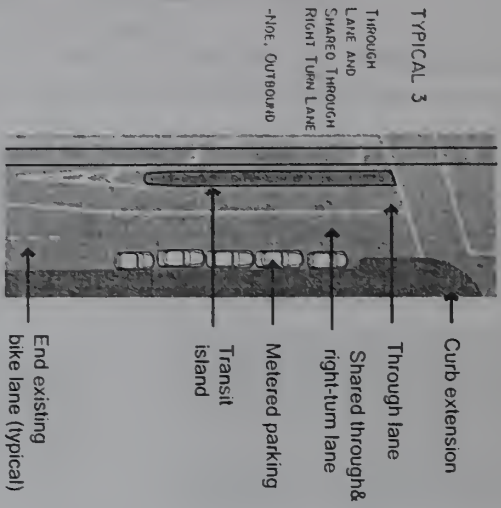
Other Departments or Agencies

- Muni, DPW, Planning

Next Steps

- Capacity at each intersection where lane removal is recommended should be further analyzed to determine if design modifications to intersecting streets, approach lanes, or other mitigation measures are necessary.





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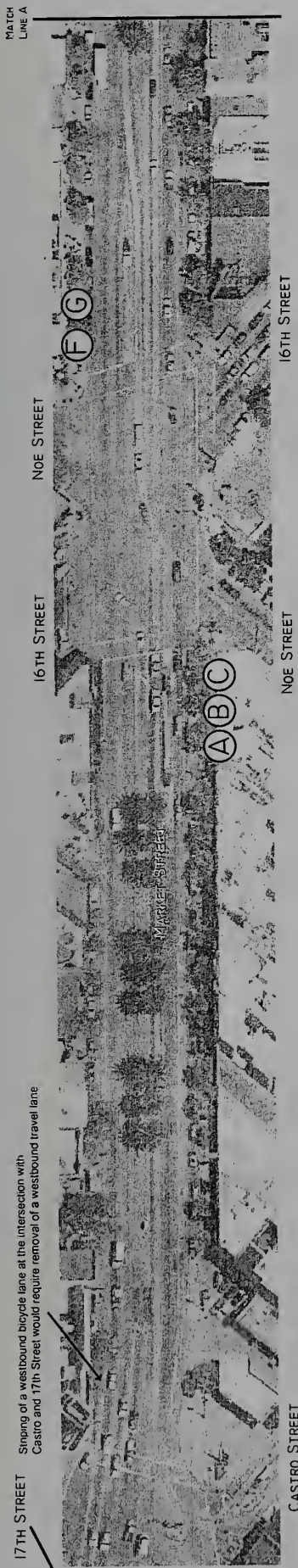
MARKET STREET

OCTAVIA STREET TO 17TH STREET

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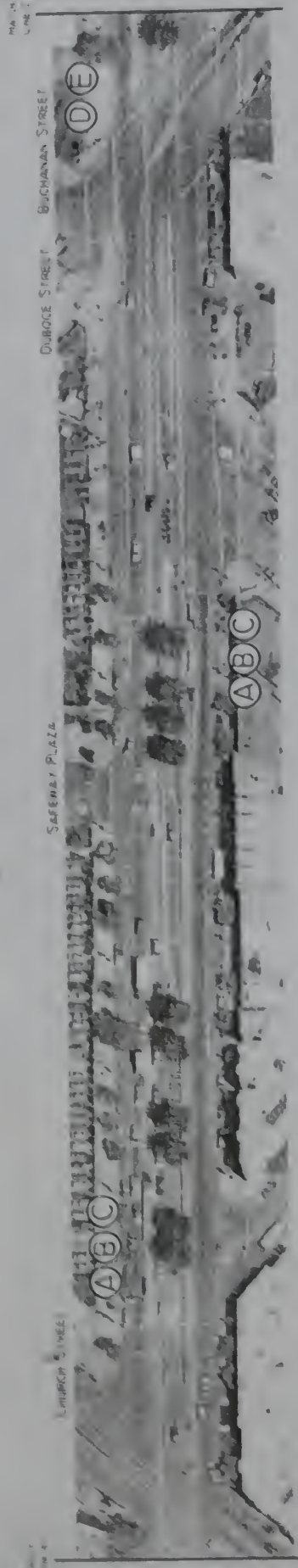
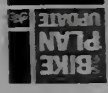




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MARKET STREET
 OCTAVIA STREET TO 17TH STREET



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MARKET STREET
 OCTAVIA STREET TO 17TH STREET

SUMMARY SHEET OUTLINE

MASONIC AVENUE, FELL STREET TO GEARY BOULEVARD

Project Description

Masonic Avenue is a high volume street extending from the Haight-Ashbury neighborhood in the south to the Geary Boulevard commercial corridor. Masonic Avenue provides access to the Panhandle of Golden Gate Park, to the University of San Francisco, and provides a connection to Presidio Avenue which leads into the Presidio and the Golden Gate National Recreation Area.

During peak-periods, Masonic Avenue has three travel lanes in the northbound direction and three to four lanes in the southbound direction. Masonic Avenue is generally uphill in the northbound direction, and has parking on both sides that is restricted according to the time of day. Many northbound cyclists who currently ride on Masonic Avenue use the wide sidewalk on the east side of the street, especially between Fulton Street and O'Farrell Street. On most blocks, the parking lane serves as a peak-period travel lane with parking prohibited on weekday mornings and evenings.

The width of the street in the project area ranges from 56 feet near Golden Gate Avenue to 77 feet near the Fell Street intersection. To allow for the installation of bike lanes, modifications to lane widths, uses, and configurations are required.

Integrated Transportation Management Systems (ITMS) should be considered in conjunction with all options presented for this project. The Masonic Avenue corridor is identified by the Department of Parking and Traffic SFgo ITMS section as a candidate for ITMS implementation. Possible design features include signal response to the actual volume of traffic and signal coordination with transit service. Implementing ITMS may make lane removals along this corridor possible without degrading transit service significantly.

A long-term option not addressed in detail in the attached design concepts includes potential roadway widening to provide additional width for a bicycle facility. This would require street tree removal and replacement, sidewalk narrowing and intersection reconfiguration that is beyond the scope of the short-term planning for the Bicycle Plan.

History/Background

As recommended in the 1997 Bicycle Plan, Masonic Avenue (between the Panhandle Path and Geary Boulevard) has been made part of the Bicycle Route 55 as a Class III facility. Other than bicycle route signage and some "Bikes Allowed Use of Full Lane" signage, no other bicycle-related improvements have been made to Masonic Avenue other than at the intersection at Fell Street (see Fell Street/Masonic Avenue Intersection Project). Creation of a sidewalk bikeway on Masonic Avenue has been suggested but not pursued due to concerns raised in the California Highway Design Manual and Americans with Disabilities Act (ADA) guidelines.

Design Segments

- Fell Street to Hayes Street: Currently, there are two southbound through lanes, a shared through/right-turn lane, and a dedicated right-turn lane at the intersection with Fell

Street. There are also three northbound travel lanes and parking on the east side of the street. A southbound through bike lane to the Panhandle Path can be provided by lane narrowing and conversion of the shared through/right-turn lane to right turn only. The bike merge required to access this bike lane must be considered while determining appropriate striping and signage.

- Hayes Street to Grove Street: In this section, there are three southbound travel lanes and a shared parking/peak-period travel lane in the southbound direction in addition to two northbound lanes and a shared parking/travel lane. With the existence of shared parking/travel lanes, bike lanes cannot be striped. Given the existing traffic volumes and transit service, a solution is required that has the potential to better serve transit. A peak-period bus/bike lane in conjunction with restricted parking may improve both bus travel times and conditions for bicyclists. Option 1 presents a shared bus/bike/restricted parking concept. Option 2 presents dedicated narrow parking lanes and a dedicated uphill bike lane, with the elimination of the two peak-period travel lanes. Option 3 requires parking removal to create a 10' wide shared bus/bike lane.
- Grove Street to McAllister Street: This segment has two travel lanes and shared parking/peak-period travel lanes in each direction. As with the above segment, bike lanes cannot be striped with the existence of shared parking/travel lanes. Given the existing traffic volumes and transit service, a solution is required that has the potential to better serve transit. A peak-period bus/bike lane in conjunction with restricted parking may improve both bus travel times and conditions for bicyclists. Option 1 presents a shared bus/bike/restricted parking concept. Option 2 presents dedicated narrow parking lanes and a dedicated uphill bike lane, with the elimination of the two peak-period travel lanes. Option 3 requires parking removal to create a 10' wide shared bus/bike lane.
- McAllister Street to O'Farrell Street: This segment has a similar cross-section as the previous segment, but the lane widths are slightly narrower. A similar design solution is required as with the above two segments, but the shared bus/bike lane would be only 14' wide as opposed to 15'. Option 2 presents a peak-period bike lane with parking restrictions, requiring elimination of the two peak-period travel lanes. Though not shown in the cross-sections, there could be an Option 3 as shown for segments B and C (Hayes to O'Farrell Streets), which requires parking removal to create a 10' wide shared bus/bike lane.
- O'Farrell Street to Geary Boulevard: This section of Masonic Avenue has three travel lanes in each direction and parking on both sides of the street. Near the intersection with Geary Boulevard, the parking on the east side of the street is eliminated to provide a right-turn lane. There is also a 14' center median, south of the Geary intersection that is approximately 200' long. Two design options are presented. Option 1 presents parking removal in order to create available width for 6' bike lanes in each direction. A second option, requiring additional investigation, is to remove the southbound left-turn lane on this segment and narrow the existing median, in order to preserve existing on-street parking, stripe a bike lane, and maintain three southbound travel lanes.

Capacity

- Masonic Avenue as is, with sub-10' wide lanes, No Left Turn restrictions at various times of the day, peak period tow-away lanes on both sides of the street, minimal unused capacity, and lack of parallel arterial, makes the removal of a motor vehicle lane and installation of a bike lane very difficult without severely disrupting traffic and transit flow along the street. However, this street may be an ideal candidate to install an Integrated Transportation Management System to allow for lane removals without significantly

decreasing the capacity of the street and degrading current levels of transit operations. Further study is required.

Transit

- Muni operates the 43 Masonic with 10 minute headways during peak periods and 12-20 minute headways during off-peak periods.
- Implementation of a shared bus/bike lane requires close coordination with transit planning and operations

Parking

- Since the parking lanes are currently restricted by time, a conversion from the shared parking/travel lanes to full-time parking lanes will increase parking capacity. However, Option 1 of Segment E, O'Farrell Street to Geary Boulevard, would result in parking loss. Also, removal of parking for a full-time bus/bike lane (Option 3) would result in significant parking loss, though this option could be modified to operate only during the peak periods as the shared parking/travel lanes operate today, which would result in no change.

Pedestrian Concerns

- Pedestrian safety along the Masonic Avenue corridor from Fell Street to Geary Boulevard would not be significantly impacted by the proposed bicycle improvements. A full-time parking lane can improve pedestrian comfort on sidewalks by providing a buffer, but the improvement on Masonic Avenue would be less significant as the wide sidewalks and mature trees (where present) already serve as a buffer.

Land Use

- Land use east of Masonic Avenue is primarily residential. University of San Francisco buildings and primarily multi-flat residential building are located along the western frontage of Masonic Avenue. The northern segment of the project site serves some commercial and institutional uses, including a significant square footage of retail.

Other Departments or Agencies

- Coordination with Muni regarding implementation of a shared bus/bike lane with parking restrictions is required to determine the most appropriate design for each segment of the project. Bicycle improvements for each block must be carefully designed with bus operations as a chief design consideration.

Next Steps

- Capacity analyses associated with travel lane reductions should be conducted by DPT.
- Transit operations analysis should be conducted for transit impacts due to proposed bicycle improvements and travel lane reconfigurations.
- Implementation of an Integrated Transportation Management System to offset capacity reduction and impacts to transit operations should be evaluated by DPT's SFgo section.



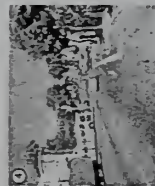
1. Masonic and Fell, looking south towards the Panhandle. The Fell/Masonic intersection is part of a separate Priority Project.



2. Masonic near Hayes, looking south. There are two travel lanes in each direction plus an additional shared-parking/travel lane on either side.



3. Masonic near Hayes, looking north. Northbound (uphill) bicyclists often use the wide sidewalk to avoid fast-moving traffic.



4. Masonic near Fulton, looking north. Left turns are prohibited at this (and other) intersections on Masonic in order to allow for greater throughput capacity.



5. Masonic near McAllister, looking west towards SFSU. There is relatively low demand for parking on the west side of the street.



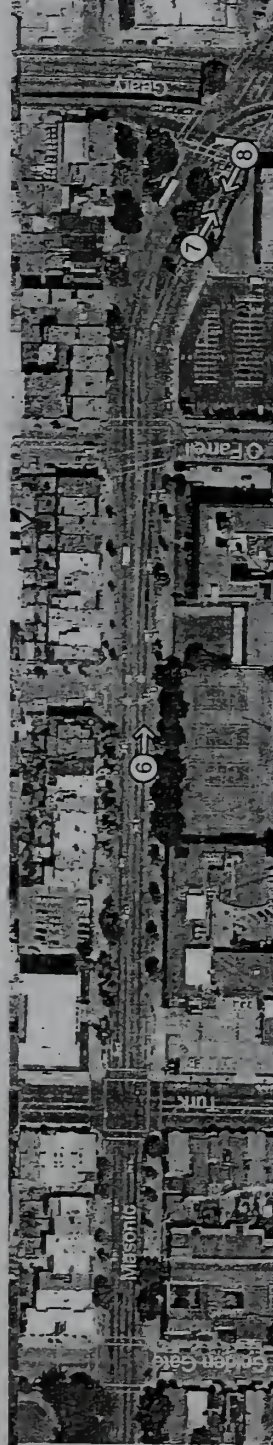
6. Masonic near O'Farrell, looking north. This area is primarily residential.



7. Masonic and Geary, looking north. The bike route jogs to the east (right) and continues northbound on Presidio.



8. Masonic and Geary, looking south. This intersection may require an innovative treatment to safely accommodate bicyclists.



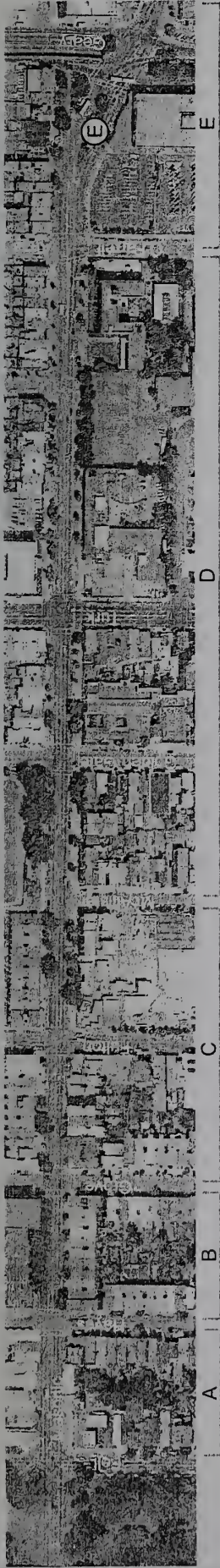
MASONIC AVENUE

FELL STREET TO GEARY BLVD.

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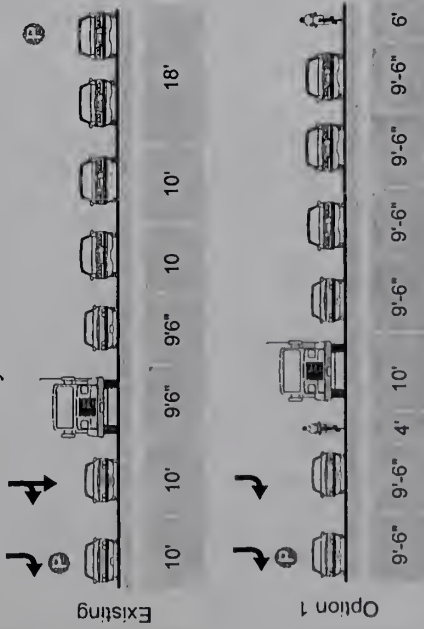
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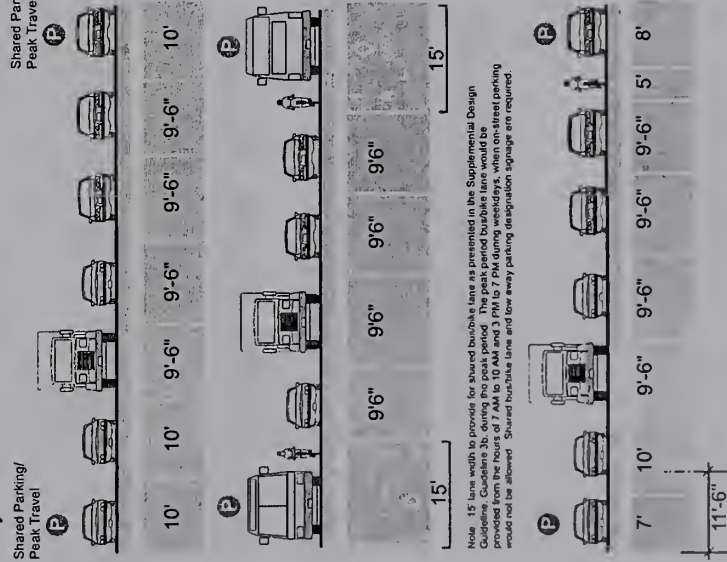


Street Cross-Sections (facing Geary Blvd.)

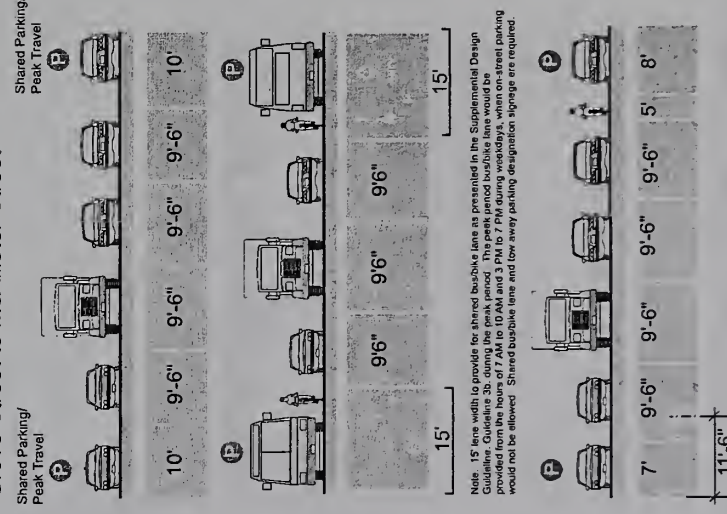
A: Fell Street to Hayes Street



B: Hayes Street to Grove Street



C: Grove Street to McAllister Street



Note: 15' lane width to provide for shared busbike lane as presented in the Supplemental Design Guidelines. Guidance for peak period busbike lane would be provided from the hours of 7 AM to 10 AM and 3 PM to 7 PM during weekdays, when on-street parking would not be allowed. Shared busbike lane and low away parking designation signage are required.

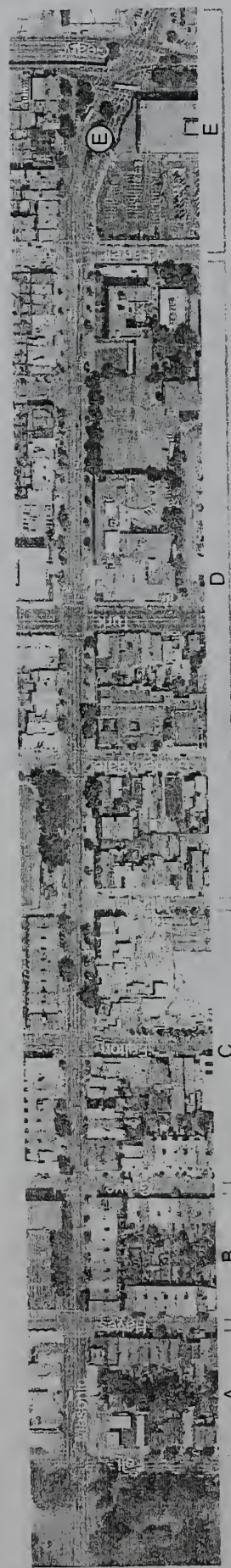
Note: 15' lane width to provide for shared busbike lane as presented in the Supplemental Design Guidelines. Guidance for peak period busbike lane would be provided from the hours of 7 AM to 10 AM and 3 PM to 7 PM during weekdays, when on-street parking would not be allowed. Shared busbike lane and low away parking designation signage are required.

Option 2

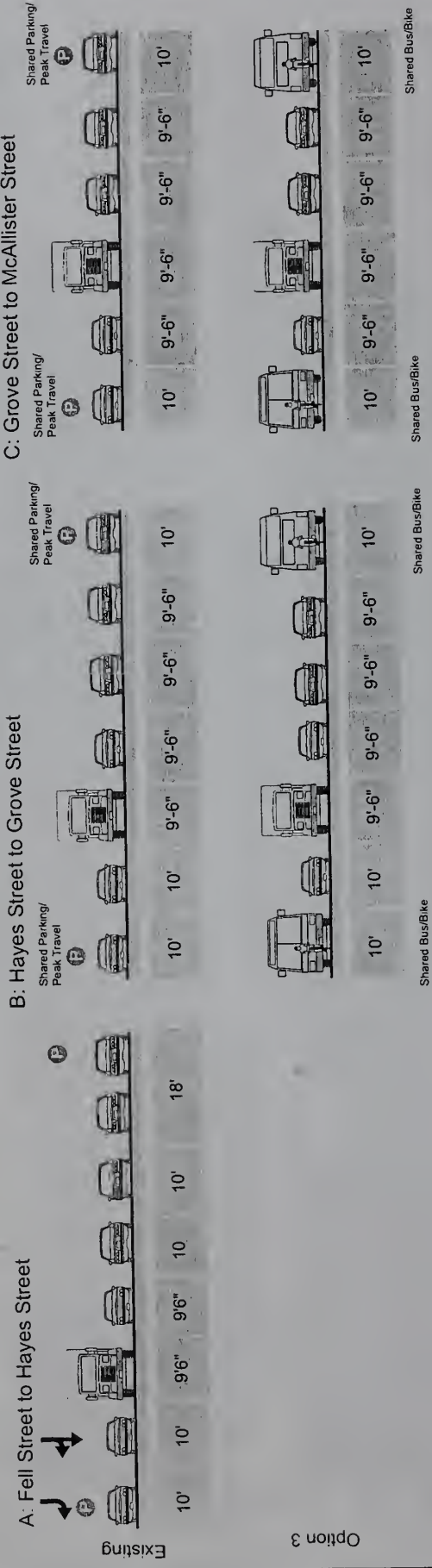
MASONIC AVENUE
FELL STREET TO GEARY BLVD.

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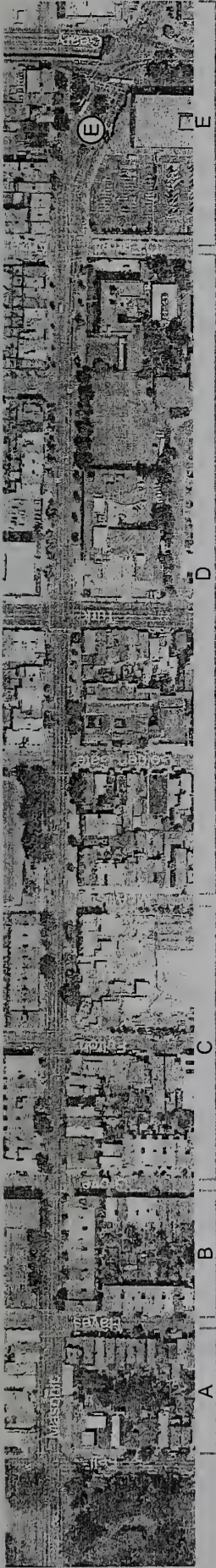
Street Cross-Sections (facing Geary Blvd.)



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MASONIC AVENUE
 FELL STREET TO GEARY BLVD.



Street Cross-Sections (facing Geary Blvd.)

D: McALLISTER TO O'FARRELL



Existing

Option 1



Note: 14' lane width to provide for shared bus/bike lane as presented in the Supplemental Design Guidelines. Guideline 3b, during the peak period. The peak period bus/bike lane would be provided from the hours of 7 AM to 10 AM and 3 PM to 7 PM during weekdays, when on-street parking would not be allowed. Shared bus/bike lane and bus/bike lane designations are required.



Option 2

E: O'FARRELL TO GEARY



Existing

Option 1



Option 2 for Segment E should include investigation of the southbound left-turn lane on Masonic Avenue and narrowing of the existing four foot median to provide for a three travel lanes, maintain existing parking, and a bicycle lane.

MASONIC AVENUE
FELL STREET TO GEARY BLVD.

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OAKDALE STREET (BAYSHORE BLVD. TO 3RD STREET)

SUMMARY SHEET OUTLINE

General Project Description

The proposed Oakdale Avenue bicycle facility would connect Bayshore Boulevard to Third Street, taking advantage of existing bicycle lane segments from Phelps Street in the west to Industrial Street in the east. Land uses surrounding Oakdale Avenue are predominantly light industrial and warehouse, resulting in frequent truck traffic and high parking utilization during business hours. Oakdale Avenue is the Bicycle Route 170, and provides a valuable connection from the Third Street corridor to Bayshore and the Bernal Heights neighborhood.

Oakdale Avenue's cross-streets include: Patterson Street, Loomis Street, Barneveld Avenue, Toland Street, Industrial Street, Selby Street, Rankin Street, Quint Street, Dunshee Street, Phelps Street, Newhall Street, and Third Street.

History/Background

- A preliminary feasibility study comparing Oakdale Avenue and Palou Avenue for bicycle lanes was completed by Department of Parking and Traffic, showing Oakdale to be a superior route based on less Muni presence, a more acceptable grade, and other land use factors.
- Continuous bicycle lanes are identified in 1997 Bicycle Plan as a project.
- Presence of bicycle facilities in industrial area was a concern when current bike lanes were studied and legislated.

Design Segments (west to east):

- Existing lane configuration from Bayshore Boulevard to Loomis Street eastbound and from Loomis Street to Bayshore Boulevard westbound needs to be preserved based on preliminary assessment of lane requirements for existing turn movements—this does not allow for bicycle lanes west of Loomis Street unless parking is removed within this block.
- Optional treatments for Loomis Street to Bayshore Boulevard westbound include (1) removal of parking (dependent on parking utilization study and investigation of potential locations for parking replacement) and (2) removal of dedicated left turn lane
- West of Barneveld Avenue, Oakdale Avenue has high parking utilization, including both private and commercial vehicles, with two travel lanes in each direction.
- From Industrial Street to Barneveld Avenue westbound and Barneveld Avenue to Industrial Street eastbound, removal of one vehicle lane in each direction would allow for installation of a 12' wide two-direction center turn lane and 5' bicycle lanes in each direction.
- Area under I-280 overpass at intersection of Oakdale Avenue, Selby Street and Industrial Street is a large intersection that requires further study in order to determine appropriate design for bicycle lanes (including intersection approach east of Selby).
- Existing bicycle lanes are in place from Selby Street to Phelps Street.

- From Phelps Street east to Third Street requires removal of the second eastbound travel lane to gain width for development of 5' bicycle lanes in each direction.
- At Third Street and Oakdale Avenue the intersection and turn lane configuration per Muni/DPW plans must be maintained, requiring bicycle lanes to begin and end 150 feet west of the planned intersection bulb outs. Feasibility of eastbound lane removal should be studied after the completion of the 3rd Street Light Rail project is completed.

Capacity

- Traffic lane transitions would be needed on Oakdale Avenue between Bayshore Boulevard and Loomis Street. **Traffic counts are currently being conducted to assess the intersection needs at Oakdale Avenue/Bayshore Boulevard.** Counts will determine the feasibility of optional treatment presented in Section A.
- Oakdale Avenue between Industrial Street and Barneveld Avenue would be converted from two vehicle travel lanes in each direction with parking on both sides to one vehicle travel lane in each direction, a center two-way left-turn lane, and bicycle lanes in each direction next to the parking lanes. Under this "road diet", each of the single travel lanes would operate at just under capacity conditions during the weekday peak periods.
- Phelps Street east to Third Street requires removal of the second eastbound travel lane (which transitions to a right-turn only lane at Third Street) to gain width for development of 5' bicycle lanes in each direction. After the Third Street Light Rail Project is constructed, an analysis of level-of-service should be conducted to determine potential impacts associated with removing this lane.

Transit

- The 23 Monterey runs on Oakdale Avenue between Bayshore Boulevard to Toland Street. Potential conflicts between existing bus stop zones and the proposed bicycle lane must be addressed as a part of the final design.
- Effects of lane removals and any truck parking changes need to be analyzed to determine if traffic impacts would negatively impact the 23 Monterey line.

Parking

- No curbside parking removal is required unless bicycle lanes between Bayshore Boulevard and Loomis Street are to be installed. This would result in the loss of ten parking spaces.
- Outreach to local businesses regarding their ability to use center turn lane for truck loading/unloading as well as likelihood of double-parking blocking the one remaining through lane in each direction is recommended

Trucks

- Truck circulation and parking issues are most significant on Oakdale from Industrial Street west to Bayshore Boulevard where truck double parking and perpendicular parking in short loading bays results in trucks extending into travel lanes, which would block the proposed bicycle lanes

- Analysis of truck parking needs of specific businesses may allow for relocation or reconfiguration of specific truck loading bays to promote clear bicycle lane. Extensive targeted outreach is required to address this topic.

Pedestrian Concerns

- Condition for pedestrians crossing Oakdale Avenue may be improved where two lanes in each direction are converted to one lane in each direction plus a center two-way left-turn lane.

Land Use

- The Oakdale Avenue corridor is primarily light industrial and warehouse with residential extending from Phelps Street in the west to Third Street in the east.
- Land use conflicts between industrial land uses and designated bicycle lanes need to be addressed in outreach for this project.

Other Departments/Agencies

- Muni and DPW should be consulted regarding the bike lane intersection with Third Street after the completion of the 3rd Street Light Rail. Muni should also be consulted if there are impacts to operation of 23 Monterey at the west end of the project area.

Preliminary Cost Estimate:

- \$56,000

Next Steps

- Outreach to local businesses to address truck parking and access needs.
- Traffic counts are currently being conducted to assess the intersection needs at Oakdale Avenue/Bayshore Boulevard.



1. View of Oakdale looking easterly towards Third Street intersection. The lane on the right is a dedicated right turn.



2. View of Oakdale looking westerly from west of Third Street. Note that the right-turn lane (shown on the left side) starts one block from the intersection.



3. Looking westerly towards Phelps. This section 60-foot wide sidewalks, two eastbound traffic lanes, and one westbound traffic lane.



4. Looking westerly through the all-way stop sign-controlled Phelps intersection. Note that Oakdale widens to 60 feet west of the intersection and includes Class II bicycle lanes.



5. Looking westerly toward the I-280 overpass crossing over Oakdale. The existing blue lane ends.



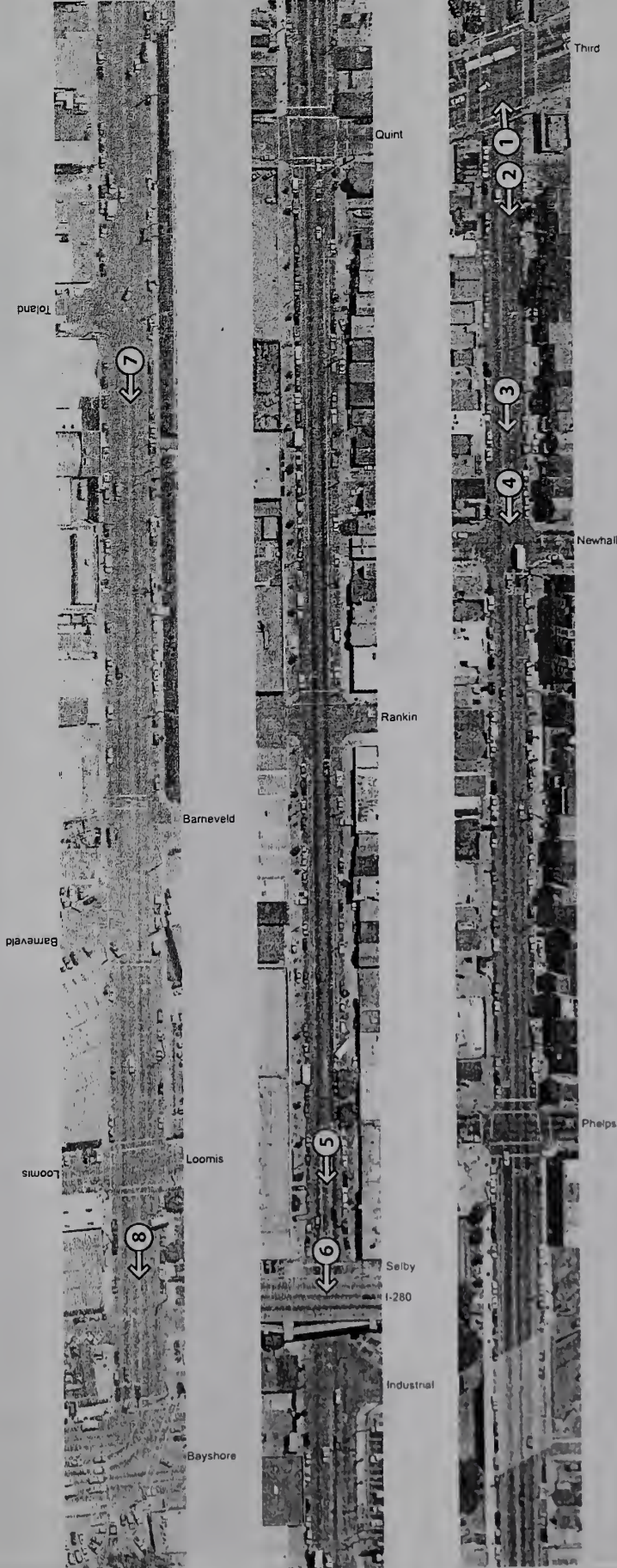
6. Underneath the I-280 overpass, local streets intersect with Oakdale, creating a complex five-way stop.



7. West of Toland, Oakdale has a 20-foot wide turn lane that is often occupied by loading commercial vehicle during business hours.



8. West of Barneveld, Oakdale has high parking utilization for both private and commercial vehicles. Parking is both local employees and regional shopping trips to the many small building materials sellers.



Oakdale Avenue

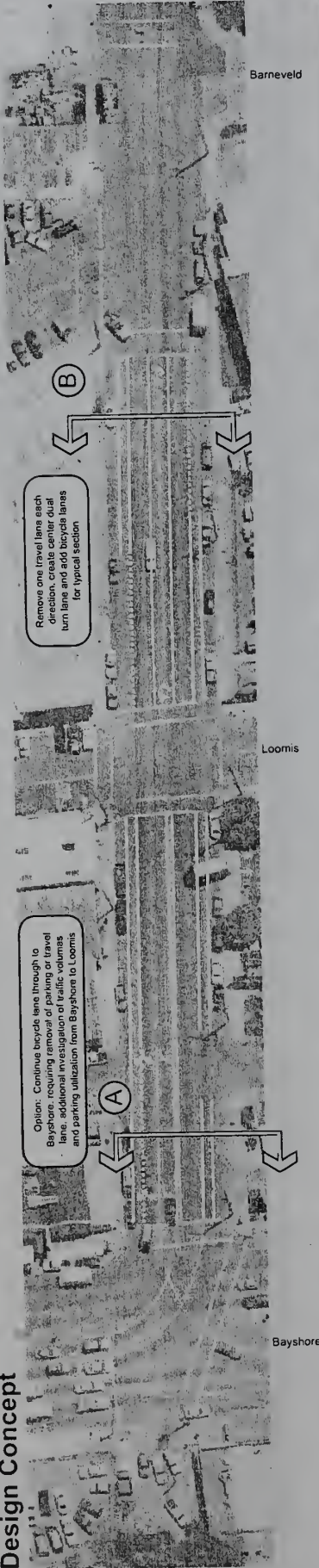
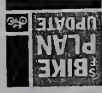
Existing Conditions

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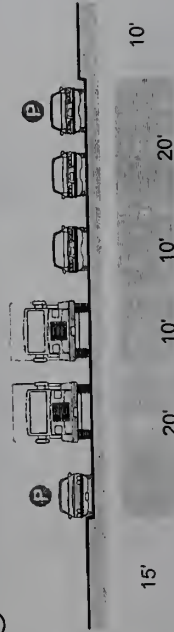
Oakdale Avenue

Design Concept



Sections

Ⓐ Existing Section/Elevation



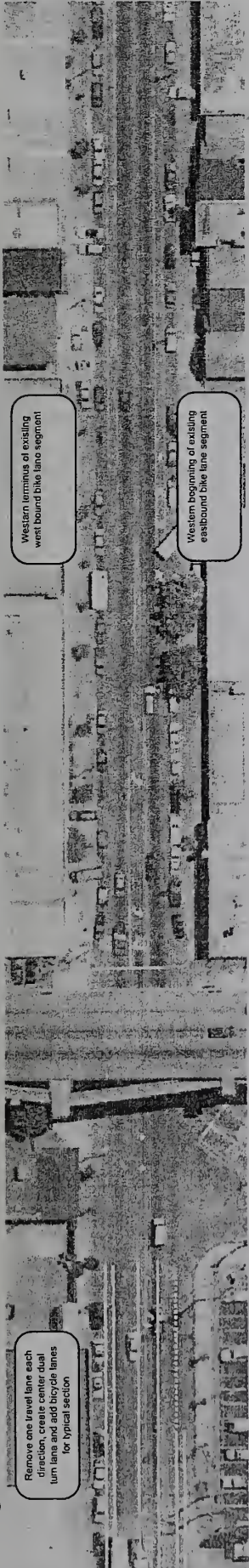
Section B shown on Page 2

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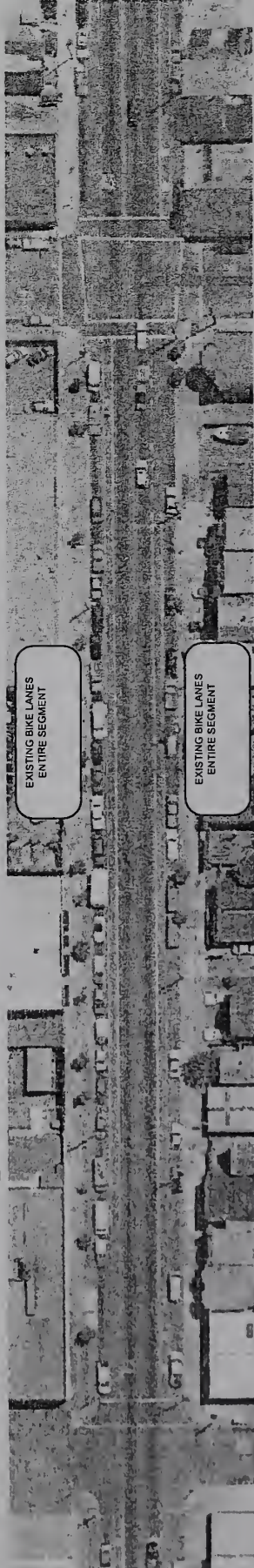
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Oakdale Avenue

Design Concept



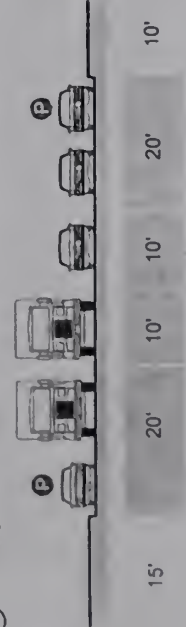
Selby
I-280
Industrial



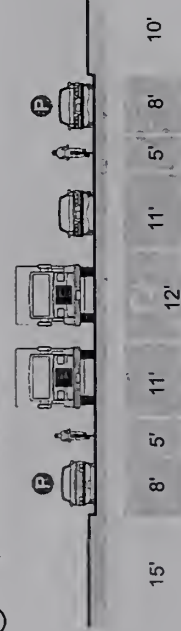
Rankin
Quint

Sections

Ⓑ Existing Section/Elevation



Ⓑ Proposed Section/Elevation



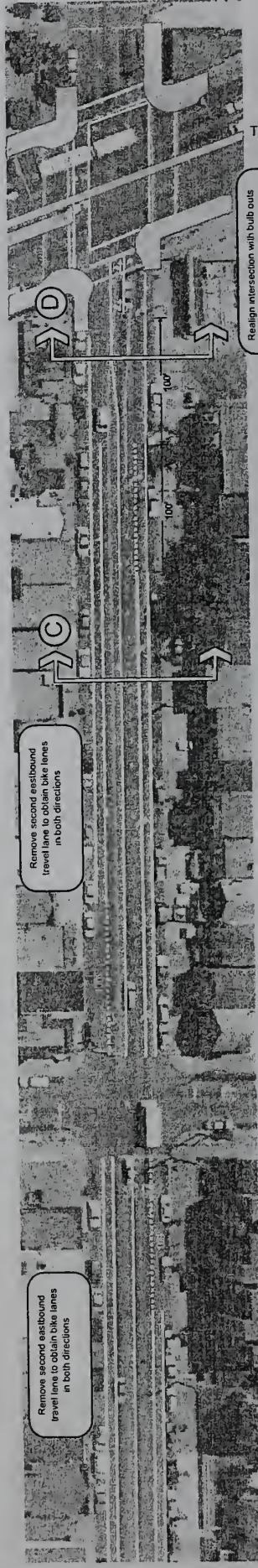
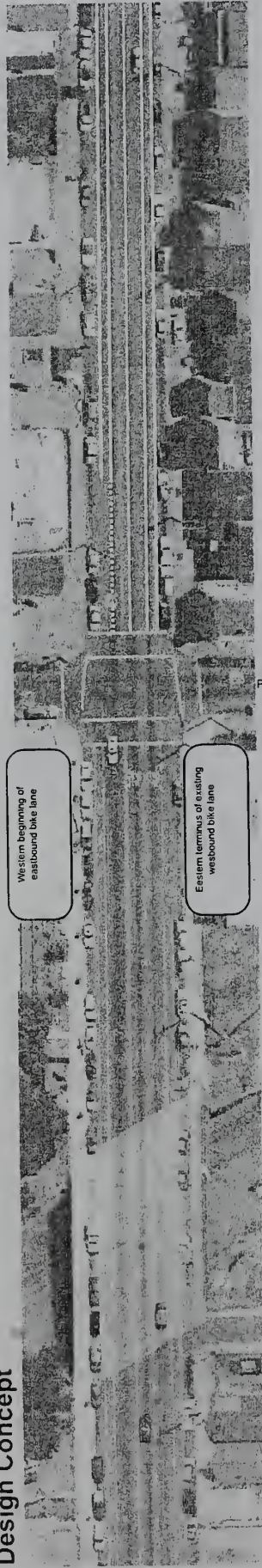
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Oakdale Avenue

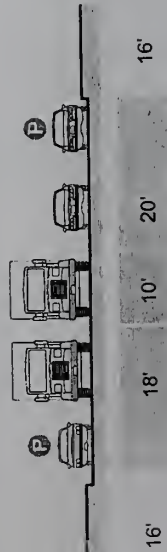
Design Concept



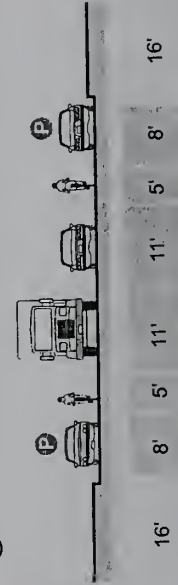
Realign intersection with bulb outs and crosswalks to meet proposed San Francisco (SFPD/MUNI) intersection improvement plans

Sections

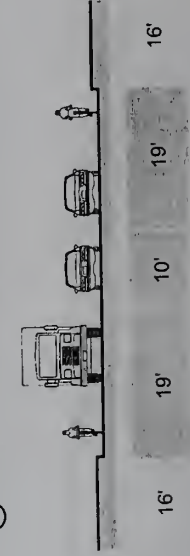
© Existing Section/Elevation



© Proposed Section/Elevation



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SUMMARY SHEET OUTLINE

POLK STREET, MARKET STREET TO MCALLISTER STREET

Project Description

Polk Street is a medium volume downtown street in the Civic Center section of San Francisco. Polk Street serves the western sides of both Russian Hill and Nob Hill, and serves as the primary north-south bicycle connection with the nearest parallel routes located on Sansome/Battery Streets and Arguello Street. The primary importance of this route is as a connection between the south/central area of the city to the northern waterfront. Polk Street is one-way southbound only between Grove Street and Market Street, adding complexity to the design requirements for improving this route. The street is two-way north of Grove Street. There are two-way bike lanes north of McAllister and a southbound bike lane between McAllister and Market. In order to improve bicycling conditions on Polk Street, a "contra-flow" lane could be added on Polk Street heading northbound on the east side of the street. This could improve northbound bicycle access from Market St. to the Civic Center and Nob Hill districts. Currently, many cyclists ride (illegally) northbound on the eastside sidewalk to access the bike lanes on Polk, north of McAllister St.

In the section between McAllister and Market, Polk Street has two lanes of travel in the southbound direction with parking interspersed along the street. Between McAllister and Grove, there is diagonal parking on the east side of the street. On the west side, there is parallel parking. Between Grove and Hayes, parking is allowed, but restricted, and between Hayes and Market, there is no on-street parking. The street serves commercial and office uses. The street is 48'9" wide between Market and Grove Street and widens to 71' between Grove Street and McAllister Street. To allow for the installation of bike lanes, one travel lane would need to be removed on the 48'9" section.

History/Background

As recommended in the 1997 Bicycle Plan, Larkin Street between Market Street and McAllister Street has been made part of northbound Bicycle Route 25 as a Class III facility, since Polk Street is one way between Grove and Market Streets. Other than bicycle route signage, no other bicycle-related improvements have been made to this section of Larkin Street. A northbound contra-flow lane on Polk Street between Market and Grove Streets has been suggested, but not pursued due to other priorities and lack of resources.

Design Segments

- *Market to Hayes:* Currently, there are two southbound through lanes, a striped 5' bike lane, and a 12'-9" parking lane on this section of Polk Street. "Contra-Flow," northbound bike lanes could be provided on this segment without the removal of travel lanes since there is no on-street parking and a large buffer on the east side of the street. A transition from Market Street to the contra-flow lane will need to be carefully designed so that it does not put bicyclists in danger.

- *Hayes to Grove:* In this section, there are basically two southbound travel lanes and a 4' bike lane. Parking is allowed on both sides of the street between Grove Street and Lech Walesa and on the east side of the street only between Lech Walesa and Hayes Street. In order to add the northbound bicycle lane, parking could be removed to provide for a buffer and curbside bike lane.
- *Grove to McAllister:* This segment currently has two southbound travel lanes, a southbound bike lane, and one northbound travel lane. The street widens to 71' in this section. It has parallel parking on the west side of the street and diagonal parking on the east side of the street. If the existing diagonal parking was converted to parallel parking, bike lanes could be provided without the need for lane removal.

Capacity

- **The impact of travel lane reductions to traffic operations on Polk Street should be studied.**

Transit

- The 21-Hayes operates on the subject segment of Polk Street, from Market Street to Grove Street, with a PM peak hour service frequency of 6 minutes, and an average weekly ridership of 13,579. Because the southbound traffic lanes will be separated from the proposed northbound traffic lane by a physical barrier or buffer, implementing the proposed bike lane is not expected to have significant impacts on Muni services. Muni also has a proposal for a contraflow lane for the 21-Hayes to Market Street.

Parking

- If a traffic analysis shows that a travel lane cannot be removed, then some of the on-street parking may need to be removed. Between Lech Walesa and Grove, there are 11 parking spaces that would need to be removed. Currently, these are metered spaces. There is also a truck loading zone that would need to be modified to accommodate a contra-flow lane.

Pedestrian Concerns

- The proposed bicycle improvements may benefit pedestrians because the proposed project may reduced sidewalk riding in this area.
- The required sidewalk narrowing adjacent to Fox Plaza may reduce pedestrian capacity at the peak period. The higher volumes of pedestrians on Market Street and intersecting streets during the AM peak period, PM peak period and during special events should be considered prior to narrowing the existing sidewalk from 17' to 12'.

Land Use

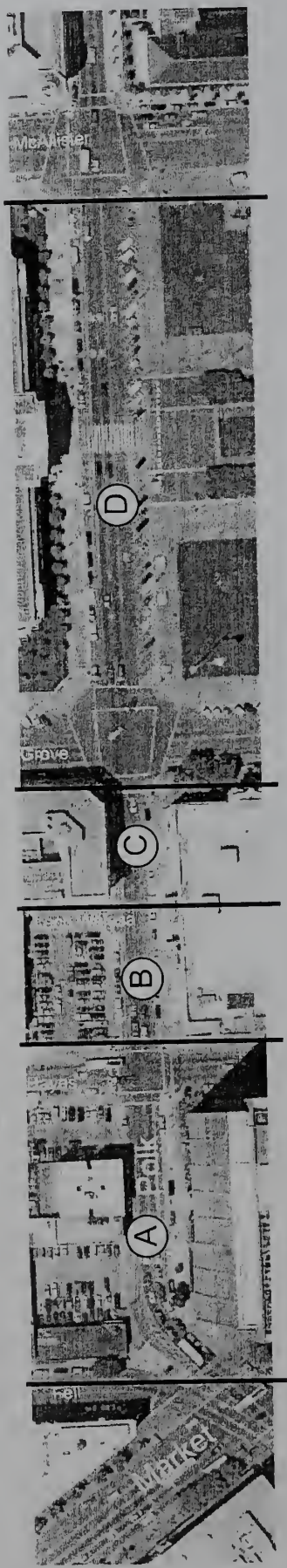
- The land use along Polk Street is comprised of a mix of residential, office, and general commercial. Sidewalk narrowing adjacent to Fox Plaza should be considered due to the high density residential surrounding the project area. The safety and experience of the high volumes of pedestrians in this area should not be compromised.

Other Departments or Agencies

- Coordination with Planning and Public Works is recommended. Additional outreach to adjacent property owners is recommended.

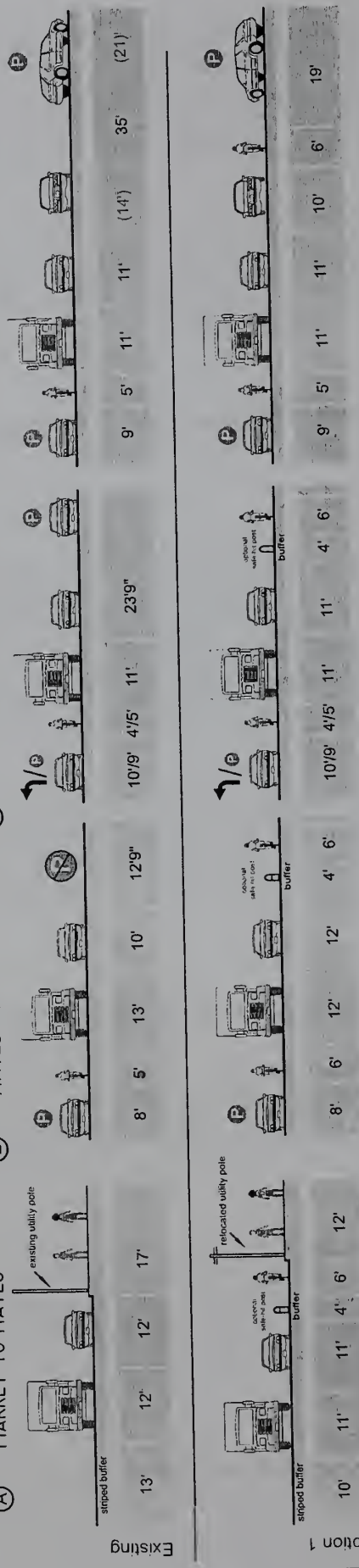
Next Steps

- Capacity analyses associated with the travel lane reduction should be conducted by DPT.



Street Cross-Sections (looking north towards McAllister)

- (A) MARKET TO HAYES (B) HAYES TO LECH WALESA (C) LECH WALESA TO GROVE (D) GROVE TO MCALLISTER (TWO-WAY)



Southbound bike and parking lanes end on the southbound approach to Market Street and are replaced by striped median on the westside of Polk approaching the Polk/Fell/Market intersection. Narrowing and other modifications to this striping pattern must be carefully designed to ensure that new striping safely guides southbound motorists through the Polk/Fell merge onto 10th Street.

Southbound left lane terminates as a parking lane (P) between Hayes and Lech Walesa, and a parking lane (P) between Lech Walesa and Grove.

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DRAFT 1/19/04

SUMMARY SHEET OUTLINE

PORTOLA DRIVE, CORBETT STREET TO SAINT FRANCIS BOULEVARD

Project Description

Portola Drive is a moderate volume arterial connecting upper Market Street in the east to the Sunset in the west. Portola Drive is an important bicycle route providing the Sunset, San Francisco State University environs, and Mt. Davidson neighborhoods with a connection to Downtown San Francisco. This route is important for both recreational and commuting purposes.

The eastern reaches of Portola Drive are characterized by apartment housing and commercial land uses. As Portola continues west it is characterized increasingly by single-family residential land uses. Portola Drive has a center median that varies in width, generally narrowing at intersections to provide width for left-turn pockets.

History/Background

Route 50 is addressed in the 1997 Bike Plan. The Plan notes that curb lanes along Portola were recently widened at the time the plan was published. No other bicycle facility improvement recommendations are made for this corridor.

Design Segments

- *A. St. Francis to Santa Ana:* The existing condition is two lanes in each direction with on-street parking and a median. Generally, the median is 4 feet wide and the curb to curb width is 32 feet westbound and 32 feet eastbound. The existing lanes can be narrowed to create an uphill bike lane, as shown in Option 1. Parking removal is not recommended in the westbound downhill direction on this segment and there is not adequate width to provide for a downhill bike lane. The shared use pavement arrow and “bikes allowed full use of lane” signage should be considered for installation on every other block to inform motorists that bicycles should be anticipated on this roadway and are allowed full use of the curb lane.
- *B. Santa Ana to Santa Clara:* The existing condition is two lanes in each direction with variations in lane width and median width. Generally, the median is 14 feet wide and the curb to curb width is 32 feet westbound and 32 feet eastbound. The median narrows to accommodate a left turn pocket at some intersections. The existing lanes can be narrowed to create an uphill bike lane in the eastbound direction, as shown in Option 1. In eastbound direction, there is a pinch immediately east of Vicente Street. Option 1 should include removal of two to three parking spaces in eastbound direction to accommodate the recommended bike lanes. Portola widens east of this short segment and other parking removal is not required.

Parking removal is not recommended in the westbound downhill direction on this segment and there is not adequate width to provide for a downhill bike lane. The shared use pavement arrow and “bikes allowed full use of lane” signage should be considered for installation on every other block to inform motorists that bicycles should be anticipated on this roadway and are allowed full use of the curb lane.

- *C. Santa Clara to Waithman:* The existing condition is two lanes in each direction with variations in lane width and a center median. Generally, the median is 4 feet wide and the curb to curb width is 32 feet westbound and 32 feet eastbound. The existing lanes can be narrowed to create an uphill bike lane, as shown in Option 1. On the eastbound side of Portola, there is limited parking demand from San Pablo Avenue east past the merge with Miraloma Drive (past the triangle-shaped merge island). No homes front this segment of the street, presenting an opportunity to remove parking to create a wider, curbside bike lane.

Approximately 8 spaces from San Pablo east could be removed and all the spaces (about 6) could be removed from the merge median. On the westbound side of Portola, a similar segment exists where parking removal is feasible immediately west of Waithman Way. No homes abut this street segment where the proposed parking removal would create an opportunity for a wider curbside bike lane that would provide bicyclists with greater room for the transition from the parallel side street.

- *D. Waithman to Sydney/Fowler:* The Eastbound existing lane configuration varies on this segment. Eastbound curb to curb width is generally 32 feet. From Waithman Way east to Evelyn Way there are two travel lanes and on-street parking. East of Evelyn Way, continuing to Fowler Avenue, on-street parking is discontinued and there are three travel lanes. The median width is generally 14 feet, which accommodates turn lanes at intersections.

The westbound curb to curb width is generally 26 feet with a 3 feet wide divider from the 19' wide parallel neighborhood street. The preferred option is to route the bike route on the neighborhood street, providing special signage along the roadway and an early curb cut to allow westbound bicyclists to safely reenter Portola prior to the intersection where the westbound neighborhood street terminates.

- *E. Sydney/Fowler to Twin Peaks:* The eastbound existing condition is three lanes eastbound from Fowler Avenue to Teresita Boulevard. From Teresita Boulevard east to O'Shaughnessy the median narrows and provides for a dedicated left turn lane and three eastbound through lanes. Continuing east from O'Shaughnessy there is a short drop of the dedicated left-turn, followed by a left-turn pocket serving Twin Peaks Boulevard, and three eastbound through lanes. The center median varies in width to provide for the left turn pockets described above.

Westbound, the segment between Twin Peaks Boulevard and Woodside Avenue provides a dedicated right turn lane, two through lanes, and two dedicated left turn lanes serving O'Shaughnessy. From Woodside Avenue to Sydney Way, Portola provides three through lanes.

Due to the complex variations in lane configuration, dedicated turn lanes, and varying median width removal of the outside travel lane would be required to provide for the eastbound bike lane and a striped buffer in Option 1. Traffic lane removal would be required both eastbound and westbound for Option 2. Intersection capacity and operations at each of the major intersections included in this segment must be closely analyzed.

- *F. Twin Peaks to Clipper:* Eastbound existing condition is three lanes eastbound leading to the intersection with Clipper Street where the curbside lane becomes a dedicated right turn lane leading to a stop sign and crosswalk at the intersection divider island. Westbound existing condition is three travel lanes.

Eastbound lane narrowing from 14, 11, and 11 foot lane widths create sufficient width for a 5 foot bike lane. The eastbound bike lane would continue adjacent to the outside curb through the dedicated right turn lane serving Clipper Street. Special signage indicating to bicyclists to continue to the stop sign at Clipper is required for this recommendation. At the intersection divider island stop sign, special signage is required to direct bicyclists across the pedestrian crosswalk to the island where they could reenter Portola Drive. Special consideration must be given to all signage on this segment as bicyclists should not be encouraged to cross the high speed dedicated right turn lane from the curbside bike lane west of the pedestrian crosswalk. Special striping or other reconfiguration of the divider island would also be required to make this design approach obvious to bicyclists and motorists.

Westbound lane narrowing from 14, 12 and 12 foot lane widths can create sufficient width for a 5 foot bike lane. The bike lane would be required to begin ___ feet west of Burnett Avenue, due to narrower lane widths immediately west of Burnett.

- *G. Clipper to Corbett/Market:* Eastbound existing condition is two lanes immediately east of Clipper Street with a wide outside lane to allow for merging of multiple travel lanes and acceleration. East of the Clipper merge into Portola there is on-street parking allowed. Westbound the existing condition is two lanes with on-street parking allowed from Corbett Street to the intersection approach at Clipper. At the Clipper intersection approach, parking is discontinued, and the lanes narrow to provide two through lanes two dedicated left-turn lanes, and. There is an existing striped divider separating eastbound and westbound traffic.

Option 1 illustrates eastbound lane narrowing and parking removal lanes to provide for a bike lane and buffer. Westbound lane narrowing and parking removal are required to provide for a bike lane and buffer. Parking along this segment in both directions is intermittent, located in between driveway curb cuts for multi-unit buildings. At the westbound approach to Burnett Avenue a lane removal would be required to accommodate the bike lane, reducing Portola from four to three lanes. There are two dedicated right turn lanes serving Clipper at the location. Option 2 illustrates east and westbound lane removal to create bike lanes with buffers.

Capacity

- *A. St. Francis to Santa Ana:* No capacity issues
- *B. Santa Ana to Santa Clara:* No capacity issues
- *C. Santa Clara to Waithman:* No capacity issues
- *D. Waithman to Sydney/Fowler:* No capacity issues
- *E. Sydney/Fowler to Twin Peaks:* Detailed capacity analysis required for both eastbound and westbound outside travel lane removals.
- *F. Twin Peaks to Clipper:* Lane removal and lane narrowing options at westbound Portola approach to Burnett Avenue needs to be analyzed for capacity impacts.

- *G. Clipper to Corbett/Market:* Lane removal needs to be analyzed for potential capacity impacts. Westbound Portola at Clipper must be analyzed for reduction in capacity

Transit

Muni operations must be carefully analyzed. Potential right side conflicts and lane narrowing, particularly in location and options with no buffer proposed, may cause Muni/bicycle conflicts. Detailed consideration of each segment and potential routes impacted is required.

Muni Routes	From	To	Service Frequency at PM Peak	Average Weekday Ridership
36	Woodside	Fowler	20 minutes	1,800
37	Corbett	Glenview	15 minutes	1,993
43*	Laguna Honda	Marine Ave	10 minutes	17,246
48	Burnett	Monterey	12 minutes	12,945
52	Burnett	Woodside	20 minutes	4,189

Parking

Quantification of proposed of on-street parking removal is required. Specific neighborhood areas impacted must be identified and potential mitigation identified. Specific areas where parking removal is required are identified above under project description.

Pedestrian Concerns

Traffic lane narrowing and lane removal would improve crossing conditions for pedestrians.

Land Use

No land use conflicts have been identified. Implementation of bike lanes on upper Portola in the vicinity of commercial land uses with large parking areas adjacent to Portola frontage should be carefully analyzed. Parking lot ingress/egress adjacent to wide outside lanes should be analyzed on a site specific basis and unique signage proposed where appropriate to alert motorists to the presence of bicyclists on Portola.

Other Departments or Agencies

None identified

Next Steps

- Capacity analysis at key intersection
- Muni operations analysis
- Quantification of parking impact where parking removal is required



PORTOLA DRIVE (SAINT FRANCIS BOULEVARD TO CORBETT
EXISTING CONDITIONS (SHEET 1 OF 1)
PRELIMINARY ENGINEERING SHORT TERM PROJECT SHEETS



8. As Portola turns into Market, northbound cyclists can enjoy excellent views of the San Francisco skyline. Because downhill cyclists can achieve speeds similar to motor vehicles, bicyclists can use the curb lane.

7. Portole, just south of Corbett, looking south. Southbound cyclists from Corbett often use this short segment of wide sidewalk to access Portola.

6. Portola, south of Corbett, looking south. In this section, there is a wide shoulder, but no on-street parking due to the presence of driveways.

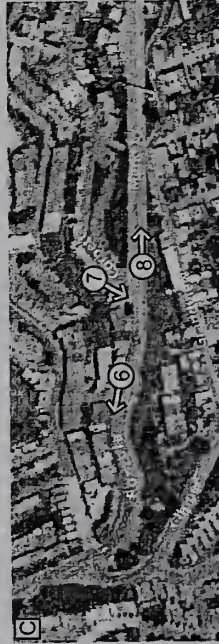
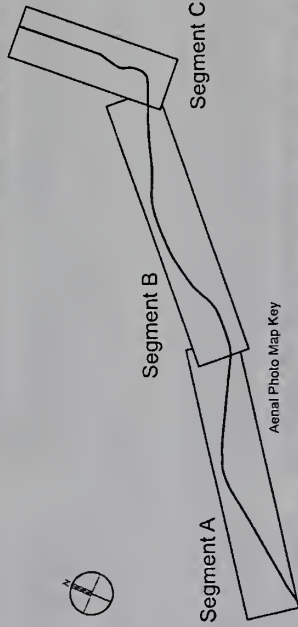
5. Portola Drive, near Woodside, looking north. This is one of the most difficult intersections along Portola, mainly due to the presence of double turn lanes.

4. Portola Drive looking north. This section of Portola varies between two and three lanes of travel in each direction.

3. Portola, north of Santa Clara Ave., looking north. This section is bounded by residential developments and has on-street parking.

2. Portola, south of Clermont, is looking north. While parking is allowed, there is relatively low demand along the east side of the street.

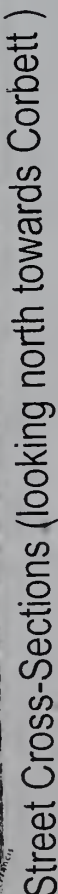
1. Portola, north of Sloat, looking north. This section of Portola has on-street parking on the east side of the street, adjacent to St. Francis Wood.



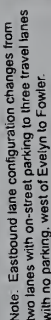
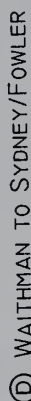
PORTOLA DRIVE
SAINT FRANCIS BLVD. TO CORBETT AVE.

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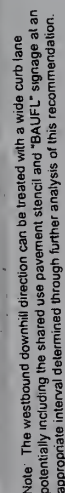
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- Ⓐ SAINT FRANCIS TO SANTA ANA
Ⓑ SANTA ANA TO SANTA CLARA
Ⓒ SANTA CLARA TO WAITMAN



parallel street
could be used
as bike facility

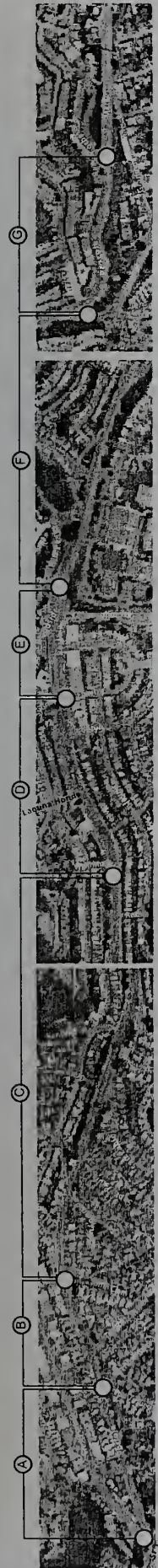


Note: The westbound downhill direction can be treated with a wide curb lane potentially including the shared use pavement stencil and "BAUFL" signage at an appropriate interval determined through further analysis of this recommendation.

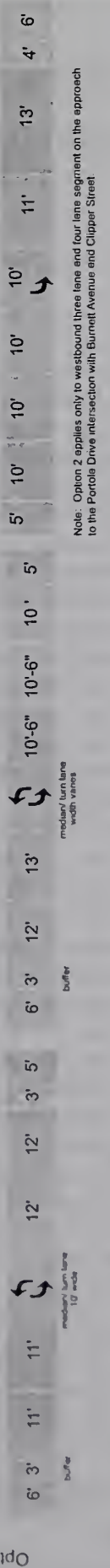
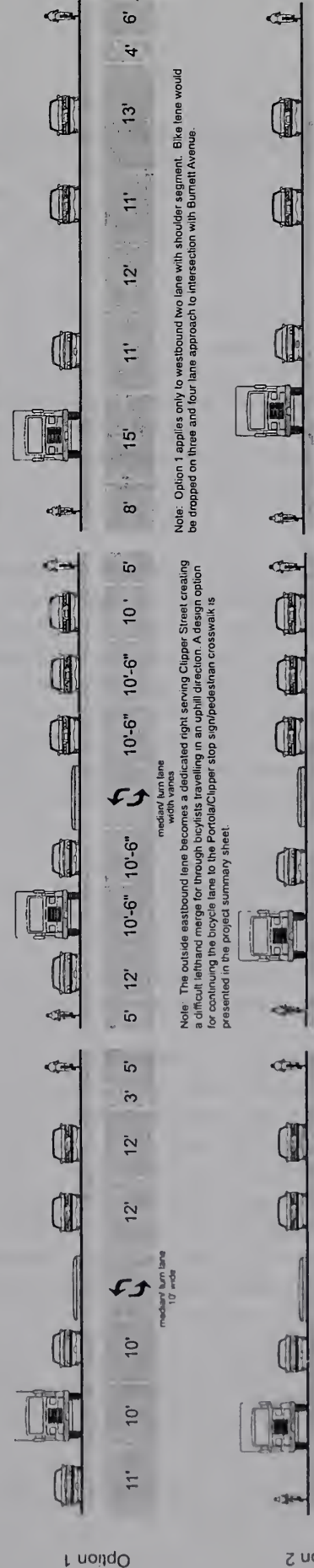
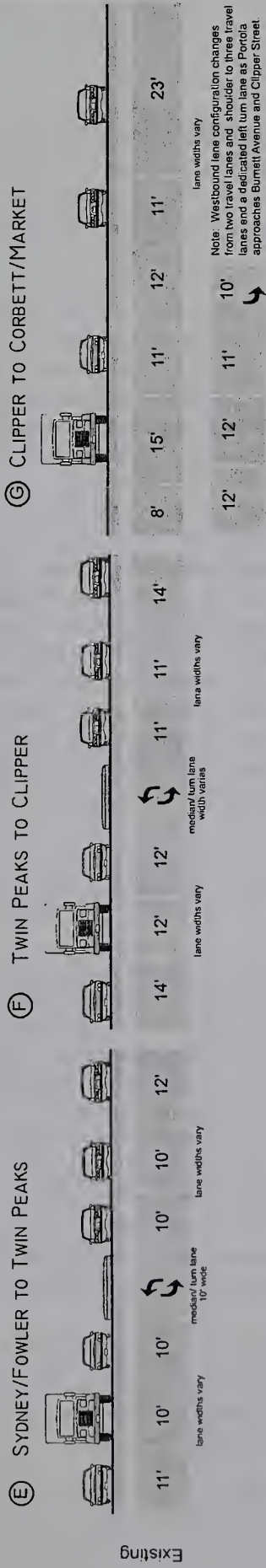
PORTOLA DRIVE
SAINT FRANCIS BLVD. TO CORBETT AVE.

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Street Cross-Sections (looking north towards Corbett)



Note: Westbound lane configuration changes from two travel lanes and shoulder to three travel lanes and a dedicated left turn lane as Portola approaches Burnett Avenue and Clipper Street.

Note: Option 1 applies only to westbound two lane with shoulder segment. Bike lane would be dropped on three and four lane approach to intersection with Burnett Avenue.

Note: Option 2 applies only to westbound three lane and four lane segment on the approach to the Portola Drive intersection with Burnett Avenue and Clipper Street.

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PORTOLA DRIVE
 SAINT FRANCIS BLVD. TO CORBETT AVE.

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SUMMARY SHEET

TOWNSEND STREET, EIGHTH TO EMBARCADERO

Project Description

Townsend Street is moderate-volume roadway in the northeastern part of San Francisco. Townsend provides an important connection between existing bike lanes on 8th Street, Division Street, and the Embarcadero. It provides access to Pacific Bell Park. There are also plans to construct a bike rental/storage facility at the Caltrain Depot at the corner of Townsend Street and 4th Street. This will increase the importance of this corridor to the city's cyclists. Currently, Townsend Street has wide curb lanes between 8th Street and 3rd Street. The curb-to-curb widths and striping configuration vary along the street.

History/Background

The 1997 Bicycle Plan calls for bicycle lanes on Townsend Street from Division to Third Streets. There is some concern that portions of Townsend Street are not an "accepted street" (a street built to city standards), but this does not preclude striping improvements to the street. Changes related to the Mission Bay Development are taking place on Townsend Street around 3rd Street. Also, some striping changes on Townsend Street at 3rd Street have been made recently to facilitate left turns for Muni. Along the southside of Townsend Street, wheel blocks were installed two years ago so that there is a space for pedestrians to walk between the angled parking and Caltrain property. In addition, the Mission Creek Bikeway concept calls for the development of a linear park with multi-use trail provisions along the southeast side of Townsend Street.

Design Segments

- 8th St. to 7th St: reduce width of travel lanes to 12' to provide bike lanes and stripe bike lanes to avoid RR tracks on east side.
- 7th St. to 4th St.: reduce width of travel lanes to 11', convert perpendicular parking to back-in angled parking or convert diagonal parking to parallel parking to provide bike lanes (parking conversion from perpendicular to diagonal or diagonal to parallel will result in loss of approximately 30% of spaces, equal to approximately 50 spaces. A pedestrian sidewalk could be provided if both perpendicular and diagonal parking orientations are "downgraded" (perpendicular to diagonal, diagonal to parallel). There is potential for a two-way path on the east side of the street between parking and Caltrain property. This would connect with the existing 12' wide sidewalk at Caltrain facility to the north. The design of the transition to the south would need to be considered.
- 4th St to 2nd St: provide room for bike lanes by eliminating one lane of travel and providing a two-way center turn lane. Maximum available width should be provided to the parking/bike lane, requiring that the center turn lane be as narrow as is permissible given local traffic conditions.
- 2nd to Embarcadero: retain striping and geometry. Sign and mark as bike boulevard (shared lane). Back-in angle parking should be considered in order to provide consistency along the corridor and to maximize safety for bicyclists.

Capacity

- The designs for this street call for the removal of travel lanes between 4th and 2nd Streets, requiring further study of the impact of travel lane reductions on traffic operations on Townsend Street and intersecting streets be studied further.
- **The DPT has recently acquired traffic counts at 2nd and 3rd Streets. These counts will be integrated into the traffic analysis.**

Parking

- Currently parking exists along most of the street, but varies between parallel, perpendicular, and diagonal configurations. Between 8th and 7th, parallel parking exists on the west side while parking is restricted/limited on the east side of the street. Between 7th and 4th, there is perpendicular parking on the west side and diagonal parking on the east side (long-term and 2-hour). Between 4th and 2nd, there is parallel parking on both sides of the street, and between 2nd and Embarcadero, there is diagonal parking on both sides.
- To provide room for bike lanes, some on-street parking will need to be reconfigured between 7th and 4th. Perpendicular parking should be converted to back-in angled parking or diagonal parking converted to parallel parking to provide bike lanes (parking conversion from perpendicular to diagonal or diagonal to parallel will result in loss of approximately 30% of spaces). This will result in the reduction in about 50 spaces. Currently, there appears to be an adequate supply of parking.
- However, new development along the street may create additional demand for on-street parking. Also, where diagonal parking is used, it is recommended that the spaces be oriented for back-in diagonal, which allows for greater visibility of cyclists from drivers parked in the parking stalls.
- **The supply of parking and curb space has been inventoried by the SFBC. These counts will be incorporated into the analysis of options.**

Transit

- MUNI operates several bus lines on Townsend, but bus service will not be affected on most of Townsend. Bus service may be delayed on the section of Townsend, between 4th and 2nd, because of the reduction of a travel lane. The following specific considerations must be addressed:
 - Layover locations for the 30-Stockton and the 45-Union Stockton are located between 4th and 3rd, requiring adequate parking lane width to accommodate 8.5-foot wide buses, without encroachment of buses into the proposed bike lane.
 - The 30, 45 and 15-Third and other lines (see table below) turn left from Townsend Street onto Third Street. These are high frequency and high ridership lines that may be impacted by changes in lane configuration and cross traffic. Future traffic volumes at this location will likely increase with more development of Mission Bay requiring that the street configuration be evaluated carefully to ensure continued reliability of MUNI service.

Bus Route	From	To	Service Frequency At PM Peak
19	8th	7th	10 minutes
10	8th	2nd	10 minutes

47	5th	4 th	7 minutes
16AX/16BX	5th	4 th	15 minutes
30	4th	3rd	5 minutes
45	4 th	3rd	8 minutes
15	4 th	3rd	7 minutes
80X/81X/82X	4th	Embarcadero	Scheduled to meet Caltrain

Pedestrian Concerns

- The proposed bicycle improvement benefit pedestrians by decreasing the effective crossing distance across Townsend. While the curb-to-curb distance will remain constant, the number of travel lanes will be reduced, so crossing at signalized or unprotected crosswalks will be simplified.
- However, since no sidewalk exists between 7th and 4th, there may be conflicts between cyclists and pedestrians that are walking in the bike lane. Option 2 creates designated sidewalk space to reduce conflicts with pedestrians in the bike lane. Sidewalks would increase pedestrian safety and comfort.

Land Use

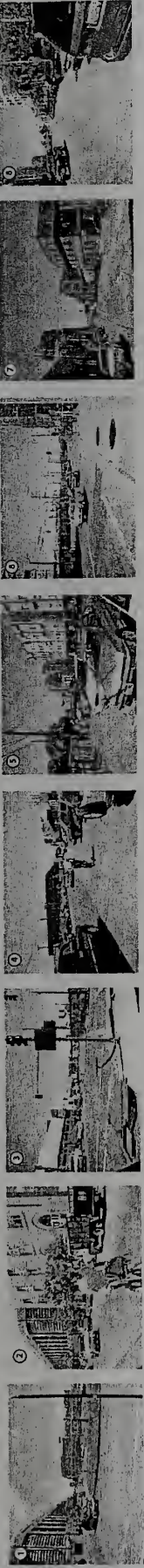
- Along Townsend, the uses vary between office, light industrial, retail, and residential. The industrial uses have historically been served by the freight railroad line that exists on Townsend between 8th and 7th. If the Caltrain rail on the street remains, this may conflict with the installation of a northbound bicycle lane.
- There are many loading docks on this segment of Townsend Street that must be considered in the final bike lane design and signage. All current land use options in Eastern Neighborhoods rezoning maintain some form of industrial zoning along Townsend.

Other Departments or Agencies

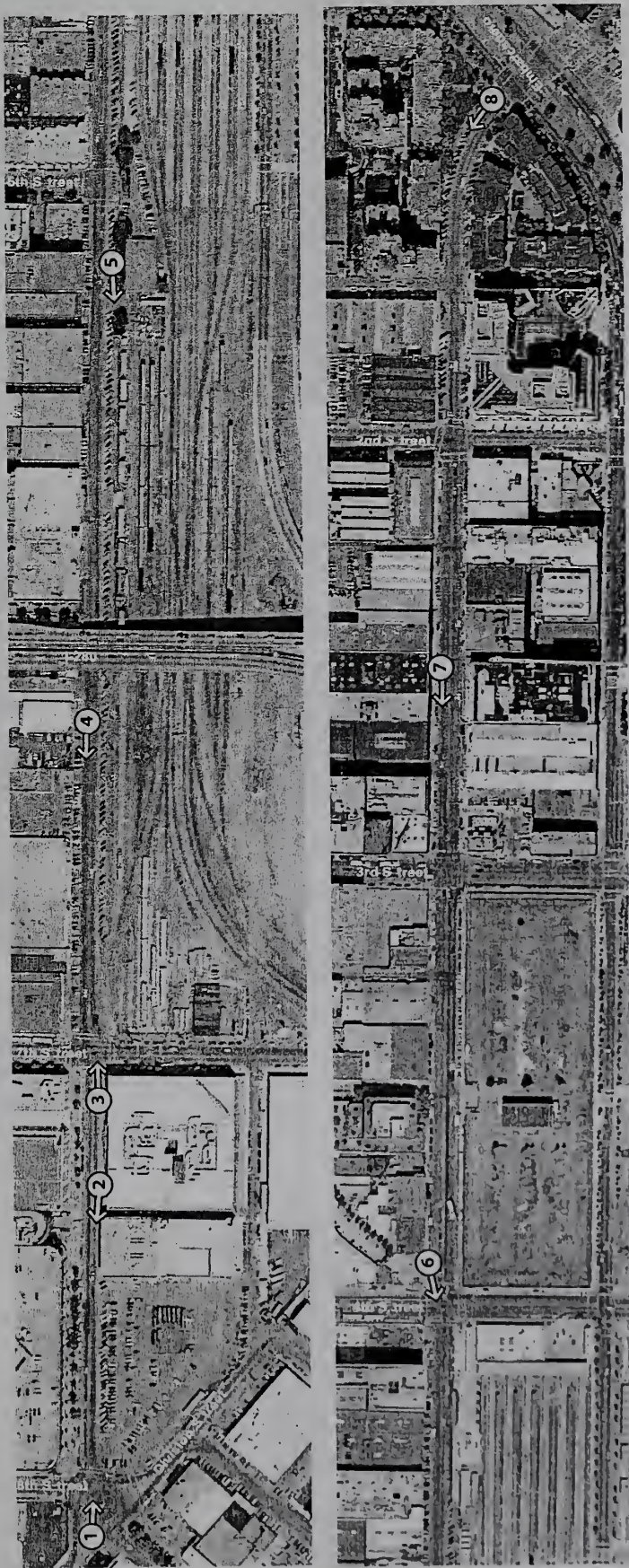
- Caltrain: The construction of a northbound path along Caltrain property between 7th and 4th should be coordinated with Caltrain.
- Muni should be involved with the development of plans on Townsend Street that may affect their service.
- The Planning Department should be involved in the further development of this project to ensure that pedestrian needs are accommodated in the final project design.

Next Steps

- Capacity analyses associated with the travel lane reduction between 4th and 2nd should be conducted by DPT.
- Potential mitigation for parking loss should be identified.



1. View of Townsend St. from the traffic circle at 8th Division/Henry Adams. Townsend connects to existing bike lanes on Division and 8th to the south and west.
2. Bicyclist riding northeast on Townsend between 8th and 7th. Note the railroad tracks on the east side of the street and the parallel parking on the west side.
3. Looking NE at the 7th St. intersection. The RR tracks veer off of Townsend towards the Caltrain Yards. This segment is striped for diagonal parking on the east side and perpendicular parking on the west side of the street.
4. Looking SW along Townsend, between 5th and 6th. This segment is also striped for diagonal parking on the east side and perpendicular parking on the west side of the street.
5. View of the informal walkway on the east side of the street between 5th and 4th, near the Caltrain Depot.
6. View of the 4th St. intersection, looking north. Note bus zones, new construction, and overhead wires.
7. Looking SW on Townsend between 3rd and 2nd. Note overhead electrical wires for buses. Two lanes of travel and parallel parking in each direction.
8. Looking SW from Embarcadero, this two lane road curves between new residential development. This segment contains diagonal parking on both sides. Relatively low vehicular travel speeds.



Existing Conditions Data



Street Cross-Sections (looking northeast towards The Embarcadero)

Ⓐ 8th St. to 7th St.

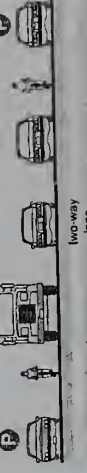
Ⓑ 7th St. to 4th St.

Ⓒ 4th St. to 2nd St.

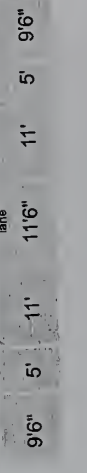
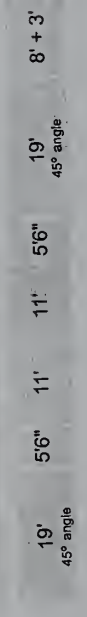
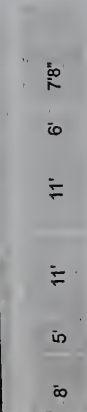


Existing

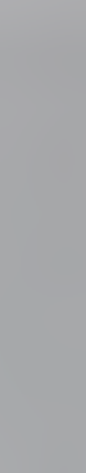
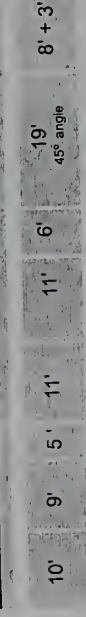
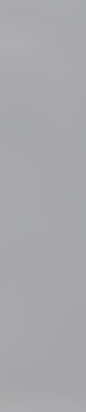
loading dock conflicts will need to be addressed with special signage



Option 1



Option 2



Option 3



Townsend Street
 Eighth to Second Street

This draft diagram is designed for public input and discussion purposes. This is a representative diagram and is not based on actual survey data. All information presented in this diagram is subject to modification.

DRAFT 11/26/03

APPENDIX 9B

SFBC Outreach Summaries

MAY 2005

2nd Street Feedback Summary

SFBC 6/13/2004

Total: 71 comments

Support Opt. A	Support Opt. B	Support Either	Oppose or No Comment
28	3	38	2

Extensive outreach was done on Second St. All of the accessible businesses received a packet of information including summary sheets, diagrams, FAQ, Info Guide, and comment cards. Two presentations were made to neighborhood groups on the 2nd St. proposals.

Second St. received a great deal of support from a variety of contacts. In general, both neighbors and businesses support some kind of bike improvement.

A major concern from both supporters and opponents of the bike lanes is the need to address the freeway at both Harrison and Bryant.

In total 69 people support the Second St. bike lanes. While the majority of them were not specific about which design they liked best, 28 supported option I, which would provide bike lanes in both directions.

A typical comment in support of option I:

"I strongly support option 1 for all of 2nd Street. I want bike lanes both ways all the way from Market to King. . particularly around the Harrison St. intersection with the freeway ramps."

Only 3 people explicitly supported option 2. But this comment sums up the concerns:

"Option 2 looks best, one bike lane on this relatively narrow street seems adequate. Option 1 would create even more gridlock during rush hour."

The majority of the people who commented just supported bike lanes. Their comments looked like this:

"I think it's a good idea. I'd like to bike here, but I know it's too dangerous."

Only two people opposed Second St. outright. Their comments looked like this:

"Having only one lane will force busses and all non-bridge traffic

into the single lane, turning what is already a very bad situation

into a nightmare."

Presentations were given to Alliance for a Better District 6 and the SOMA Planning Council. Follow-up is still in progress.

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

#

5th Street Feedback Summary

SFBC 6/13/04

Total: 66 comments

General Support of Improvements	Support Opt. 1	Support Opt. 2	Oppose	No Comment or Non-sequitur
14	In General: 25	In General: 7	2	6
Specific Support:	Specific:	Specific:		
40	a. 7 b. 6 c. 7 d. 8	a. 1 b. 2 c. 1		

Extensive outreach was done on Fifth St. All of the accessible businesses received a packet of information including summary sheets, diagrams, FAQ, Info Guide and comment cards. Four neighborhood groups or major

downtown stakeholders received presentations on the Fifth Street proposals, including the SOMA Planning Council, Alliance for a Better District 6, Forest City Development, and the Community Business Partnership. We are following up with the the Planning Council and the Alliance for letters of support. The Community Business Partnership has already sent in its letter of opposition.

Fifth Street received strong support from both neighbors and cyclists. Businesses had more mixed support. In particular, the Business Partnership, which represents 20 businesses on or around Fifth Street, had major concerns about reducing capacity on Fifth Street. They would like to see the road accessible to all users but ultimately, they want car traffic to be prioritized as well as have the intersections further studied. As a representative from the Downtown Parking Corporation put it:

"We favor option two for the following reasons:
it does

not reduce capacity...and it will not create a significant

safety hazard for the bicyclists."

In total 40 people support the Fifth St. bike lanes. 20 people specifically supported option 1, which called for bike lanes on both sides of the street for the length of Fifth Street and seven people supported option 2.

People who were in favor of option 1 often said things like:

"I prefer option 1 because it provides bikes lanes the full length in both directions for safety."

Seven people supported Option 2 for Fifth St. They said things like:

" I'm in favor of option 2 because I feel that reducing the

lanes of auto traffic will have the additional effect of traffic

calming similar to the way bike lanes of Valencia St. removed

auto traffic lanes and slowed down traffic,
shifting auto traffic to Guerrero/Dolores."

Only two individuals came out against the choice of Fifth Street and 7 people either had no opinion or had comments that weren't relevant to the street designs.

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

14th Street Feedback Summary
SFBC 6/13/04

Total: 97 comments

Support Opt. A	Support Opt. B	Support Either	Oppose or No Comment
17	44	30	6

Outreach on 14th Street included street side tabling, flyers to all residences and door-to-door merchant outreach. All businesses on 14th and nearby businesses on Market Street received information packets including summary sheets, diagrams, FAQ, Info Guide, and comment cards. Neighborhood presentations are still in progress.

The range of comments for 14th Street were more narrow than some other streets, with more specific input on the designs themselves. The bulk of the comments were focused on support for some type of bicycle improvement. However, there were a few comments that were either opposed or had no suggestion whatsoever. Of the 95 people who submitted comments, 90 people supported some kind of improvement on 14th.

30 people added their support with no preference for options A or B. Overall, their comments focused on the need for something to be changed. A comment that summed up the over feeling of this group is:

"Would love to see more bike lanes. One way would be safer

for bikes, but eliminating a two way street would be tough for drivers."

17 people explicitly supported option A. Many of the comments did not explain their support. However, the overall feeling was that it would have less negative impact on cars. This is echoed by the two businesses that gave comments on the proposals.

A typical comment was:

"Option A- probably easier to keep 2-way for residents to turn left."

Option B received the most support with 43 people in favor it. People tended to cite the need to both connect the bike lane and address parking. One standard comment being:

"I support design option B- 14th turns into 1-way at Dolores anyway. Prefer optional parking configuration- bike lanes on curb are safer, and it affords more parking."

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

#

17th Street Feedback Summary

SFBC 6/13/04

Total: 53 comments

Support 17th	Support Option 1	Support Option 2	Support Option 3
14	General: 8	General: 0	1
	Specific Support	Specific Support	
	a. 8 b. 4 c. 4	a. 3 b. 6 c. 5	
Support 16 th	Support of Corridor Improvement s	Bike Lanes on 16 th & 17th	Support 18th
7	5	4	2

There is still a great deal of outreach to be done on 17th St., as the SFBC received diagrams late in the process. Door to door outreach and meetings with major stakeholders are in progress.

As for the individual comments, many people had specific feedback about the changes they'd like to see happen for the corridor. Half of people who commented supported 17th and option 1 the length of the street. The other half was divided between wanting bike lanes on 16th, along anything through the corridor, bike lanes on 18th, or a bike lane in one direction on both 16th and 17th.

Many of the supporters of bike lanes on 17th St. wanted wider bike lanes. A typical comment:

"If you (DPT) want to leave 16th St for cars & buses, give us a good route on 17th! Narrow the car lanes to 9 feet & put in bike lanes. Colored bike lanes!"

A typical comment for creating bike lanes on both 16th and 17th:

"I suggest that you consider the idea of using BOTH STREETS ...with a bike lane in ONE DIRECTION on one of the two streets and a bike lane going THE OTHER DIRECTION on the second street."

Many people preferred bike lanes on 16th Street, but were resigned to 17th if significant improvements were made. A typical comment:

"If there would be no way for a bike lane on 16th, then driving for cars on 17th should be very uncomfortable, so that the cars are forced to go on 16th."

Please see attached raw comments from neighbors and bicyclists.

19th Ave/SFSU Feedback Summary

SFBC 6/13/04

Total: 7 comments

Total 19 th Avenue Support	Support Opt. 1	Support Opt. 2	Oppose
7	0	5	0

There is still a great deal of outreach to be done on 19th Ave. A meeting to discuss the plans with SFSU is being re-scheduled. The comments included here came from Bike to Work Day and Earth Day tabling events at SFSU, as well as, comments from the April 21st Feedback Workshop.

All of the participants supported bike improvements. One person gave the very general comment of, " Bike lanes would be great." Others gave very specific feedback.

For the most part people supported option 2. As one participant put it:

"Option 2 appears to work best for casual riders."

Other suggestions were also made:

"One alternative not considered is the elimination of parking on the 19th Avenue segment. While this might require Caltrans approval, it would not impact private property access, and would probably be the least costly of alternatives."

Please see attached raw comments from neighbors and bicyclists.

Alemany Boulevard Feedback Summary

SFBC 6/13/04

Total: 54 individual comments

Support	Maybe	Opposed	No Comment
42	3	7	2

Alemany Boulevard received wide support from individuals and mixed reviews from neighborhood groups. There are few businesses on Alemany. Because of Alemany's residential nature, it serves as a commute thoroughfare and people both in support of and opposed to the project have concerns about how the flow of traffic will be affected at intersections.

Seven major neighborhood groups that surround Alemany Blvd. received presentations. Only one group formally opposed the project, the Outer Mission Residents. Many groups were evenly divided within their membership. Members either felt that bike lanes were good because they slowed traffic and would help with safety, or they felt that all cyclists broke the law and that bike lanes would make traffic worse.

Comments from individuals took distinct sides. Three people commented that they would only support the bike lanes if it didn't have drastic impacts on car traffic or safety. A typical comment from them was:

"If two lanes on Alemany will reduce traffic speed on the street works out, then I'm all for it."

The seven individuals who opposed the proposal tended to feel that car traffic would worsen with the loss of a car lane. Their comments looked like this:

"Eliminating 2 lanes would not result in traffic calming, it would only make congestion worse and result in more

accidents as people try to make up for lost time getting to work."

However, 42 people strongly supported the project. Half of those who commented in support are non-cyclist neighbors. The support comments are best summed up by this neighbor:

"Alemany will be a great cross city connection. The re-striping will be a great opportunity to improve pedestrian safety and add greenery back to the median!"

One or more presentations about the Alemany Blvd. proposals were made to the following groups:

New Mission Terrace Neighborhood Association, Outer Mission Residents Association, Ingleside Terraces Homes Association, Cayuga Improvement Association, Excelsior District Improvement Association, Aide to District 11 Board of Supervisors, District 11 Council, Excelsior Action Group, and LISC.

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

#

Bayshore Boulevard Feedback Summary

SFBC 6/13/04

Total: 22 individual comments

Option 1				
A	B	C	D	E
11	1	6	3	1
Option 2				
Support Only	B	C	D	E
6	11	4	7	8

Outreach work on Bayshore Boulevard is in progress. Two neighborhood groups received presentations, both with mixed support from members.

Overall, Option two received the most support. The general sentiment is summed up by this comment:

" I ride Bayshore often to get to and from work in South San Francisco and find that the speed of traffic is really way too fast. I recommend removing a lane of traffic over removal of parking to make room for bikes. I figure, the freeway is right there, if people want to drive fast they should get on that!"

Presentations were made to the Bayview Hill Neighborhood Association, Friends of McLaren Park and the office of Supervisor Sophie Maxwell.

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

#

Broadway Tunnel Feedback Summary

SFBC 6/13/04

Total: 24 comments

Support	Opt. 1	Opt. 2	Opt. 3	Opt. 4	No comment
23 4 with no specific option	6	1	4	10	1

Because the designs were not available until the end of March, outreach on the proposed designs only included the community workshop and on-line feedback. These comments were gathered from 3/31/04 until

5/25/04. Five stakeholder groups received presentations. Continued outreach is in progress.

Comments from participants reflect a concern regarding money and time. Many people voted for option 4 but voiced their concern about funding.

Presentations were made to the following stakeholder groups:

Aaron Peskin of the Board of Supervisors, Telegraph Hill Dwellers, SPUR (San Francisco Planning and Urban Research Association), North Beach Citizens, and Bartol Alley Neighborhood Group.

#

Cesar Chavez / 26th Street Feedback Summary

SFBC 6/13/2004

Total: 169 comments

Total Cesar Chavez Support	Support 26th	Support Either	Only Oppose Cesar Chavez
88	54 15 for 26 th because they oppose Cesar Chavez	10	12

There is a range of five types of comments for the Cesar Chavez/ 26th corridor consisting of:
support for either Cesar Chavez or 26th, strong support for Cesar Chavez, strong support for 26th St., or opposition to Cesar Chavez.

One major concern is the effects that Cesar Chavez would have on Precita. 27 people responded from the Precita neighborhood (primarily through form emails). Their main concern focused on potential traffic diversion onto Precita. They either supported 26th St. or just opposed Cesar Chavez.

88 people strongly supported Cesar Chavez. While most of the comments were not specific about whether they supported option 1 or option 2, of the people who did comment on options only 2 people supported option 2.

A typical comment in support of Cesar Chavez:

"Please, we need to have bicycle lanes on Cesar Chavez!

They will serve many purposes: connecting our neighborhood
to the other bike lanes in the rest of the city,
reduce collisions
and make the neighborhood more bicycle and pedestrian safe."

54 people strongly supported 26th Street. They tended to respond by saying that bike lanes on Cesar Chavez would be dangerous and that 26th would be safest for bicyclist.

A typical comment for 26th Street.:

"I support the 26th Street bike boulevard. I'd like to slow traffic down
on Cesar Chavez, but don't want traffic to flow onto Precita. Unfortunately,
Cesar Chavez is a main artery in and out of the city."

The two far ends of the spectrum were people who were either for both or against Cesar Chavez.

A typical comment in support of either Cesar Chavez or 26th Street:

"I like some change in this corridor. 26th bike blvd is my preference but I would be concerned if that was done without combining it with traffic calming on some of the side streets. On the Chavez option, I prefer option one, I like the median."

A typical comment against Cesar Chavez:

"As a Bernal Heights resident (21years) frequent user of Cesar Chavez Ave and city bicyclist, I strongly oppose reducing lanes on Chavez to accommodate cyclists. Chavez is a motor vehicle conduit, purely and

simply, by every criterion."

Presentations were made to the following neighborhood groups: Precita Valley Neighbors, Bernal Heights Community Center, Friends of Rolph Playground, and South Cesar Chavez Neighbors (SOCECHA).

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

#

Fell/Masonic Intersection Feedback Summary

SFBC 6/13/04

Total: 84 comments

Total Fell/Masonic Support	Support Opt. A	Support Opt. B	Support Opt. C	Oppose or No comment
80	3	15	31	4

The Fell/Masonic intersection received some of the most detailed feedback of all the projects. This feedback reflects comments gathered during street side tabling, neighborhood meetings, online comments, and the feedback workshops. They were gathered from 2/18/04 to 5/28/04. The outreach focus has been on neighborhood groups and individuals.

In general, there is support from all kinds of users to improve the intersection. Very few comments seemed to be a hundred percent behind one of the options. People often chose an option and then added extra improvements they would like to see with it.. Many of the participants looked at the intersection from multiple perspectives. In particular, people had concerns about the impact on pedestrians. As one participant said:

" All options are better than the status quo. The most

important change would be to give peds and bikes a head

start with the signals. Also, when crossing Fell and Oak as

a ped, the lights change too quickly from green to red without a safety buffer."

The least popular of the options was option A. The general feeling of those comments was that any improvement would be good improvement. As one person put it:

" Option A would meet my needs for this intersection regarding the panhandle path."

Option B was the second highest ranked option for people who gave specific feedback. People who supported Option B tended to feel this way:

"Option B sounds like a good one to me. I like the idea of safe hit posts as they will slow down the motorists who cut the corner and turn from Fell onto Masonic very fast!"

By far, Option C was the most popular. Many people felt that Option C was the best for all parties involved. As one person said:

" Option C is best. It feels the safest. The left turn is where the most danger comes from (rather than the traffic on Masonic)."

Eight neighborhood groups and key stakeholder groups were met with including: NOPNA, the Urban School, Stanyan Fulton Association, Friends of Rec and Park, Panhandle Residents Organization Stanyan Fulton, Five Together, and Haight Ashbury Neighborhood Council. Most groups support general improvements for the intersection. Both the North of Panhandle Neighborhood Association and the Urban School support the plans. Other groups are split on their support but are in the process of being followed up with.

Please see attached raw comments from neighbors, bicyclists and civic groups.

Illinois Street Feedback Summary
SFBC 6/13/04

Total: 27 comments

Total Illinois Support	Support Opt. 1	Support Opt. 2	Oppose or No comment
21 total	a. 7 b. 6 c. 3 d. 5 e. 5 f. 5 g. 4 h. 4	a. 1 b. 4 c. 5 d. 3 e. 3	3 oppose 3 non sequiturs

Illinois Street is a mixed land-use street, including retail businesses, live-work units, and small businesses. Major stakeholders include not only businesses and neighbors but the Port as well. The Dogpatch neighbors, Potrero Boosters, Bayview Hill Neighbors, The Port, and the India Basin Coalition were all given presentations of the proposals. The Dogpatch and India Basin neighbors will write letters of endorsement. There is no formal opposition among the neighborhood groups, however the Dogpatch neighbors would like Indiana to also be considered.

All of the accessible businesses received packets of information including summary sheets, diagrams, FAQ, Info Guide, and comment cards. Additional meetings were held with the Port, including discussions about public access on the bridge. Our outreach demonstrated mixed support for the bridge itself, but support for bike lanes along the length of Illinois (including the bridge).

Only two businesses submitted comments so far (it should be noted that the SFBC was not permitted to enter several large buildings that contain many small businesses). These two businesses were equally split. Their major concerns are parking and cyclist safety on a truck route. These concerns were echoed by the three people who oppose the improvements to Illinois. A typical comment:

"Illinois is a bad street for bikes, traffic much too high for bikes. Indiana is much better. Less traffic connects with 4th ..."

Overall, more people supported option 1 on the whole. Their comments looked like:

"Love option 1 (new bridge with bike access) linking Cargo Way provides a comprehensive alternative to Third Street."

People who preferred option 2 tended to be more pedestrian minded and commented on the need for sidewalks. As this participant put it:

"I prefer wider sidewalks and fewer parking spaces. Sidewalks throughout are very important. Better to have parallel parking than no parking. Buffer for pedestrians."

Due to the limited access to businesses along Illinois Street, the SFBC posted many flyers along the length of the street promoting the workshops and design proposals.

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

#

Laguna Honda Intersection Feedback Summary

SFBC 6/13/2004

Total: 23 comments

Support Some Kind of Improvement	Option 1	Option 2	Oppose/ No Comment
20	5	1	2 Opposed 1 No Comment

Outreach around the Laguna Honda intersection is in progress, as the SFBC received the designs late in the process. The comments included here were collected from 4/21 - 5/25. These were gathered at the April 21st Feedback Workshop, streetside tabling at the intersection on Bike to Work Day, and from on-line comment forms.

Many Laguna Honda neighbors attended the April workshop and there is some opposition from a neighborhood group concerned about removing the left turn pocket. They would like to see bikes but don't feel that the designs proposed are the best alternatives.

Many people gave general support such as:

" I ride through here all the time and I love the proposed changes."

People who chose an option preferred option 1, with the left turn for bikes:

"Yes to option1. Create left-turn bicycle lane on Laguna Honda to Woodside.

It will really help bikes navigate that scary intersection."

Major stakeholders such as the Laguna Honda Hospital and Walk SF need to be met with again.

Please see attached raw comments from neighbors, bicyclists and civic groups.

#

Upper Market Feedback Summary

SFBC 6/4/2004

Total: 75 comments

Support Some Kind of Improvement	Support Typical 1	Support Typical 2	Support Typical 3	Oppose / Non Sequitur
12	A. 14 B. 16 C. 17	D. 11 E. 36	F. 10 G. 28	3 Opposed 4 Non Sequitur

These comments were collected from 4/14-5/25. The majority of the comments were collected at the feedback workshops,

streetside tabling, merchant outreach and Bike to Work Day events.

Merchant outreach is in-progress. Fifteen businesses have been formally met with and they are split in their support, due to potential for parking removal. The Upper Market Merchants Association strongly opposes removal of parking.

Most individual comments included very specific preferences for each option. A popular combination was "C, E, G." As one person put it:

" Please implement option C, Option E, and Option G. If you remove parking, you will encourage people to take public transportation, walk and ride their bikes. As fewer people drive, the area will become even more popular with pedestrians. "

People who supported bike channels felt that they added an extra safety buffer.

"I think the bike channels are a great idea. The help newer cyclists to understand where the best place to ride is (pass right turning cars on the left, for example)."

Support from businesses was mixed, as evidenced by these comments from merchants:

"RE: Typical 2 we prefer E (removing parking). This will improve the safety for bicyclists and improve Market Street for Everyone."

"We would like to see the extension of bike lanes but w/o the removal of existing parking spaces."

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups.

Masonic Street Feedback Summary

SFBC 6/13/04

Total: 53 participant comments

Total Masonic Support	Support Opt. 1	Support Opt. 2	Support Opt. 3	Oppose/ Non-Sequitur
49	General: 19	General: 2	General: 6	Oppose : 3 N/S: 1
	Specific :	Specific :	Specific :	
	a. 4 b. 1 c. 2 d. 2 e. 3	a. 0 b. 4 c. 3 d. 2 e. 1	a. 0 b. 0 c. 0 d. 0 e. 0	

Overall, the proposed changes for Masonic were widely supported. 49 participants supported bicycle improvements. Neighborhood presentations were given to Hayes Valley Neighborhood Association (HANC), NOPNA, and Hayes Valley Neighborhood Association. There was also street side tabling at the NOPNA street fair and along the Panhandle.

People who oppose the lanes are primarily concerned with the speed of traffic and the removal of any parking. As one participant said:

"No parking removal. It is already a nightmare to come home

after about 7pm and find parking in this area."

Option 1 was the most preferred by participants. The idea of a permanent space for bikes was mentioned in almost every comment. For example:

" Option 1 seems good- preserves bike lanes 24 hours. Also

Allows huge bike lane when buses are not present during peak times."

Option 2 seemed to be preferred by people who wanted to move more with the flow of traffic.

"Option 2 would be optimal for me, as I think a dedicated bike lane going up hill will be good for bikers and also for people who want to keep the parking spots. I go slower up and if I have to share the lane, I'll be more scared and may use the sidewalk, which is not good!"

Option 3 was supported by people who felt it was a good compromise.

" I feel that a combination bike/bus lane is the best approach for all section. I wonder why it's not possible to have a ten foot bus lane that can also be used by bikes especially since the 43 runs ever 10 minutes most of the time."

Please see attached raw comments from neighbors, bicyclists and civic groups.

#

Oakdale Ave Feedback Summary

SFBC 6/13/2004

Total: 13 comments

Support	Oppose
13	0

Oakdale Avenue received most of its comments from the Bayview feedback workshop. All of the businesses received outreach materials including summary sheets, diagrams, FAQ, Info Guide and comment cards. Most businesses weren't opposed to bike lanes but they were opposed to the removal of parking, particularly the businesses closer to Bayshore Blvd.

Presentations were made to the Bayview Hill Neighbors and India Basin Neighbors, both support the Oakdale bike lanes. India Basin will write a letter of support.

Because the bulk of the comments were received at the workshop, they tended to support the bike lanes. However, a big concern raised was the relationship of the Oakdale bike lanes to Bayshore Blvd. In particular, making a left turn onto Bayshore Blvd.

A typical comment looked like:

"How can we connect from Bayshore to Loomis ? It is important to connect up. Also under I-280 is a problem spot."

Please see attached raw comments from neighbors, bicyclists, business contacts and civic groups.

Polk Street Feedback Summary
SFBC 6/13/04

Total: 32 comments

Support	Oppose
31	1

There is little feedback at this time on Polk. Because it was one of the last projects received by the SFBC, there is still outreach to be done including re-scheduling meetings with Fox Plaza and the North of Market Planning Coalition. One group has been met with specifically about Polk proposals: the Tenderloin Development Corporation and it has not taken a position on the designs.

The feedback from participants was extremely supportive. However, many people also suggested that the left turn from Market onto Polk be addressed. As one person put it:

"Way to go! Let's make it happen - - only suggestion is a

clear, easy way for bikes going East on Market to
make a
left turn on Polk St."

Several people also wanted more secure barriers or visual
clues for drivers. A typical comment:

"I strongly support the contra-flow
bike lane. The safe-hit posts are very
important since there are no contra-
flows in SF now. Also, I want colored
bike lanes for added safety."

Please see attached raw comments from neighbors, bicyclists
and civic groups.

#

Portola Drive Feedback Summary

SFBC 6/13/2004

Total: 12 comments

Support Portola	Oppose
10	2

To date, there has been limited outreach on Portola, as the
SFBC only recently received the designs. Comments were
gathered from 3/27 - 5/27. A presentation was made to the
West Portal Ave. Association, who are in support of the
proposal.

The speed of traffic and traffic predictability is a
concern for both cyclists and neighbors. People who opposed
the lane were opposed to both the removal of parking and
cyclist riding behavior.

Cyclists tended to support a general improvement. Two
comments recommended installing a bike path due to the
excessive speed of cars along this corridor. There was also
a feeling of concern particularly around the Woodside
segments.

" The segments F & G from Woodside to Portola should be rethought.

The steepness of the approaches means that very few people will use

this. As Prop K has enabled \$455 M to bicycles, a more appropriate

strategy (such as wider roadways or bike paths) should be considered."

Please see attached raw comments from neighbors, bicyclists and civic groups.

#

Townsend Street Feedback Summary

SFBC 6/13/04

Total: 46 comments

Total Support	Support Opt. 1	Support Opt. 2	Support Opt. 3	Oppose/ Non sequitur
42	2	15	10	4

Townsend is a popular street for commuters both downtown and those heading down the peninsula. Because of its proximity to Caltrain there are a number of concerns about parking access and the way current parking affects bicycles.

All of the accessible businesses on Townsend received packets of information including summary sheets, diagrams, FAQ, Info Guide, and comment cards. Seven businesses gave positive feed back. As this business put it:

" I would love to bike lanes on Townsend. Many of our employees bike to work and our part of Townsend, as it exists, is treacherous."

All of the individuals who commented supported some kind of bicycle improvement and acknowledged the need for a sidewalk on the street. Most feedback was in regards to Section B, from 7th to 4th streets. 15 people supported option 2. A standard comments was:

"I like option 2 as being more bike and pedestrian friendly."

The 10 people who supported option 3 tended to echo those who supported option two but saw option 3 as a compromise that helped everyone.

"Option 3 provides for safer parking for office workers and bike lanes in both directions."

Both the Alliance for a Better District 6 and SOMA Planning Council received presentations and were receptive to the proposed changes.

Please see attached raw comments from neighbors, businesses, bicyclists and civic groups

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APPENDIX 9C

Network Improvement Map

MAY 2005

Legend

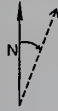
Existing Bicycle Network

Proposed for Improvement or Study
Streets

Proposed Study Area

Open Space

Supervisory Districts



DRAFT San Francisco Bicycle Plan: Network Improvement Document Map

02/18/05

3. Implementation Phasing

Gavin Newsom | Mayor

Rev. Dr. James McCray Jr. | Chairman

Tom Nolan | Vice-Chairman

Cameron Beach | Director

Shirley Breyer Black | Director

Wil Din | Director

Peter Mezey | Director

Leah Shahum | Director

Nathaniel P. Ford, Sr. | Executive Director/CEO

Implementation Phasing- Proposed Near-Term Projects

June 5, 2007

(In alphanumeric order)

- 2nd Street bike lanes, Market Street to King Street
- 5th Street bike lanes, Market Street to Townsend Street
- 7th Avenue at Lincoln Way, traffic signal and timing modification
- 7th Avenue bike lanes/sharrows, Lawton Street to Lincoln Way
- 14th Street eastbound bike lane, Market to Dolores Streets
- 16th Street bike lanes, 3rd Street to Illinois Street
- 17th Street Corridor, Corbett Avenue to Kansas Street
- 19th Avenue mixed-use path, Buckingham Way to Holloway Avenue
- 23rd Street bike lanes, Kansas Street to Potrero Avenue
- Alemany Boulevard bike lanes, Rousseau Street to Bayshore Boulevard
- Alemany Boulevard bike lanes, San Jose Avenue to Rousseau Street
- Bayshore Boulevard bike lanes, Cesar Chavez Street to Paul Avenue
- Bayshore Boulevard southbound bike lane, Industrial Street to Silver Avenue
- Beale Street southbound bike lane, Folsom Street to Bryant Street
- Broadway bike lanes, Polk Street to Webster Street
- Broadway Tunnel signage improvements
- Buckingham Way bike lanes, 19th Avenue to 20th Avenue
- Cargo Way bike lanes, Jennings Street to Amador Street
- Cesar Chavez Street bike lanes, US 101 to I-280
- Cesar Chavez/26th Streets corridor bike lanes, US 101 to Sanchez Street;
- Claremont Boulevard bike lanes, Portola Drive to Dewey Boulevard
- Clipper Street bike lanes, Diamond Heights Boulevard to Douglass Street
- Division Street bike lanes, 9th Street to 11th Street
- Fell Street and Masonic Avenue signal improvements
- Fremont Street southbound bike lane, Howard Street to Harrison Street
- Glen Park Area bike lanes (San Jose to Alemany connection)
- Holloway Avenue bicycle boulevard, Lee Avenue to Varela Avenue
- Howard Street westbound bike lane, short extension at 9th Street
- Howard Street westbound bike lane, The Embarcadero to Fremont Street
- Illinois Street bike lanes, 16th Street to Islais Creek
- Innes Avenue bike lanes, Donahue Street to Hunters Point Boulevard
- John F. Kennedy Drive bike lanes, Kezar Drive to Transverse Drive

- John Muir Drive bike lanes, Lake Merced Blvd to about 1,000' south of Skyline Boulevard
- Kansas Street bike lanes, 26th Street to 23rd Street
- Kirkham Street bike lanes, 6th Avenue to Great Highway
- Laguna Honda Boulevard bike lanes, Plaza to Woodside Avenue
- Laguna Honda Boulevard bike lanes, Woodside Avenue to Portola Drive
- Market and Valencia Streets intersection and traffic signal improvements
- Market Street bike lanes, Octavia Boulevard to 17th Street
- Market Street bike lanes, Van Ness Avenue to Octavia Boulevard
- Masonic Avenue Corridor, Fell Street to Geary Boulevard
- McAllister Street bike lanes, Market Street to Masonic Avenue
- McCoppin Street bike path, Market to Valencia Streets
- McCoppin Street westbound bike lane, Gough Street to Valencia Street
- Mississippi Street bike lanes, Mariposa Street to 16th Street
- North Point Street bike lanes, Van Ness Avenue to The Embarcadero
- Ocean Avenue bike lanes, Alemany Boulevard to San Jose Avenue
- Otis Street westbound bike lane, South Van Ness Avenue to Gough Street
- Page and Stanyan Streets traffic signal improvements
- Phelan Avenue bike lanes, Ocean Avenue to Judson Avenue
- Point Lobos Avenue bike lanes, Great Highway to El Camino del Mar
- Polk Street contra flow bike lane, Market Street to McAllister Street
- Portola Drive bike lanes, Corbett Avenue to O'Shaughnessy Blvd
- Portola Drive bike lanes, O'Shaughnessy Boulevard to Sloat Boulevard
- Potrero Avenue/Bayshore Boulevard bike lanes, south of 25th Street
- Sagamore Street/Sickles Avenue bike lanes, Brotherhood Way to Alemany Boulevard
- Scott Street northbound left turn bike lane, Oak Street to Fell Street
- Sloat Boulevard bike lanes, The Great Highway to Skyline Boulevard
- Townsend Street bike lanes, The Embarcadero to 8th Street
- "The Wiggle" improvements (The "Wiggle" is the flattest route for cyclists traveling from Market Street to the Panhandle Path and Park. It is a group of streets collectively identified by many cyclists as the "Wiggle" due to the numerous turns involved. The streets often associated with the "Wiggle" include: Duboce, Steiner, Waller, Pierce, Haight, Scott, and Fell Streets.)

